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THE

GLASGOW MEDICAL JOURNAL

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GLASGOW MEDICAL JOURNAL

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FOR THE

Glasgow and West of Scotland Medical Association

JULY TO DECEMBER, 1915

VOL. LXXXIV

GLASGOW:
ALEX. MACDOUGALL, 70 MITCHELL STREET
LONDON: H. K. LEWIS, 136 GOWER STREET
1915

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THE

GLASGOW MEDICAL JOURNAL.

No. I. July, 1915.

ORIGINAL ARTICLES.

NOTES OF CASES IN GENERAL PRACTICE.

By JOHN F. FERGUS, M.A., M.D.

In submitting to the readers of this *Journal* the following notes on cases occurring in everyday general practice I am fully conscious that they are not likely to form any serious contribution to scientific medicine, or indeed to present ought of novelty; but arising as the cases did in the ordinary course of general practice, and presenting, as some of them did—to myself at least—some points of special interest, it is my hope that they may prove of some interest, or, at least, be not unduly tedious to others engaged in general practice where the facilities for applying modern research methods to diagnosis are not always as available or as applicable as they are in hospital practice. Some of the cases are recorded from memory, or from very scanty notes, while to avoid tedium I have omitted wearisome detail of routine physical examinations, progress of the case from day to day, &c., and have only set down the points that interested me most personally.

Case I.—*Enteric fever with severe head symptoms in a boy of 8 years; three other cases in the same household.*

In the month of September some years ago I received a telephone message from the head clerk of Mr. S. (a patient of mine who resided in Partick) to say that Mr. S. had telephoned from a seaside resort near Liverpool, where he was spending a holiday with his family, that his eldest son, a boy of about 8 years of age, was dangerously ill, and had been pronounced to be dying by the doctors in attendance; and that Mr. S. would be greatly obliged if I could travel up by the night train to Liverpool and see the boy before he died. On enquiring from the head clerk the nature of the boy's illness, he told me that he understood it was meningitis, and in expressing his sympathy for Mr. S., he said he was especially sorry for Mrs. S., as she had had some worry over a maid-servant who had taken ill after the family left for their holiday, and who had had to go home. In closing the conversation the clerk remarked that it was perhaps as well that Mr. S. and his family were from home, as there was a good deal of illness in Partick at the time, and there were said to be some cases of enteric fever.

Journeying overnight, I arrived early in the morning at the hotel where Mr. S. was staying, and found him almost frantic with grief at the illness of his son, who, it appeared, had been ill for between two and three weeks, and had got much worse recently, having been unconscious for some days. His case had been pronounced one of meningitis, following on a peculiarly severe form of influenza, which was then said to be prevalent in the watering-place, and the doctors—two gentlemen in partnership—gave Mr. S. practically no hope of the boy's recovery. The elder of the two doctors shortly came round to the hotel, and in talking over the case before we saw the patient was emphatic in his diagnosis of a meningitis depending for its origin on influenza, and in confirmation cited other cases that had occurred in the vicinity. The boy, he said, had been ailing for some time, and had developed head symptoms, including photophobia and headache, and had become unconscious, while Kernig's sign was said to be present, and also some retraction of the head.

On proceeding to see the patient we found him lying in a darkened room, in a more or less comatose condition; his face was flushed, his temperature chart showed an elevation of temperature over a considerable number of days, reaching over 103° at some period of the twenty-four hours; the pulse, though fairly rapid, was not unduly so, and tended to be dicrotic; the tongue was dry and furred; and the pupils were equal, and responded equally to light. There was no evident retraction of the head; as far as could be ascertained there had been no convulsions; and on testing for Kernig's sign I could not satisfy myself that it was present.

Though the boy was critically ill, with severe head symptoms as the predominating feature of his condition, there did not seem to me quite sufficient evidence to label the case unequivocally as one of meningitis, and remembering what Mr. S.'s clerk had said about enteric being prevalent in Partick, I suggested that possibly an explanation of the case might be found in its being one of enteric fever. Some enlargement of the spleen and some suspicious spots on the abdomen seemed to strengthen this hypothesis, and as I found that Widal's test had not been applied, I ventured to suggest that it should be tried.

My suggestion was very unfavourably received, and the idea of enteric scouted—though the length of time the patient had been out of Glasgow did not preclude the possibility of an infection contracted before he left his home in Partick—and it was only by pressing the fact that I had come specially from Scotland to see the case, and that it would be a satisfaction to me to know before my return that enteric could be excluded, that I got consent from my colleague to have the Widal test applied. In view of the clerk's remark about enteric being prevalent in Partick, I had taken some capillary tubes with me, and, a sample of the blood having been taken, the patient's father was despatched to the laboratory at Liverpool with a request that the result might be communicated to us as soon as possible.

Meanwhile, while awaiting the result of the Widal, the patient's mother called my attention to her younger son, a boy about 5 years of age, who, she said, seemed out of sorts, listless, and heavy, and very unlike his usual very robust and active self. The child was listless and apathetic, he had a temperature of 103°, his tongue was dirty, there had been some diarrhœa—attributed to a stomach attack from too rich food in the hotel—

and he had some very suspicious spots on his abdomen, which his mother and nurse had considered heat-spots due to his stomach upset, but which seemed to me very like the rose spots of enteric.

Later in the day the father arrived from Liverpool with the result of the Widal, a markedly positive and rapid reaction, so that, taken in conjunction with the elder boy's symptoms and the history of the illness, a diagnosis of enteric fever seemed to me to be fairly well established. I had to return to Scotland in the evening, and as the mother wished the younger boy to be at home in the event of a prolonged illness, we made arrangements with the railway company, and the boy and his mother travelled north with me. A sample of his blood submitted to the Glasgow Laboratory shortly afterwards showed a well marked positive Widal, and he went through a fairly typical attack of enteric fever of moderate severity, without complications except for some cardiac irregularity persisting for some considerable time.

On arrival at her house in Partick, Mrs. S. found that the maid-servant, who had gone home ill after Mrs. S. had left for the English watering-place, had returned to the house in Partick. The story was that she had gone home to Stirlingshire, and had been ill there with ill-defined symptoms, being out of sorts, with some diarrhœa, and as she had not improved after being away about ten days, she returned to the house in Partick. She seems to have been suffering from an ambulant form of enteric, as she also gave a marked Widal reaction, had a rash of rose spots, and on removal to an infectious hospital went through a fairly severe attack of enteric.

Being in daily attendance on the younger boy in Partick, I was kept informed of the condition of the older boy in England, which continued to remain very serious, the unconsciousness continuing, but as he had been a healthy boy previously and had a good constitution, I was not without hope that he might yet pull through what, in view of his positive Widal reaction and the illnesses of his younger brother and the maid-servant, there seemed to be no reasonable doubt was a severe attack of enteric fever. I was therefore much surprised when, rather more than a week after I had seen him at the English watering-place, his mother told me that as he was no better, and his cerebral symptoms still severe, the doctors in England had decided that the only hope for his recovery was to have an operation on his head, and it was desired that I should see Sir William Macewen and arrange with him to have the boy's skull opened. In view of the facts narrated above I demurred very strongly to any such operation being attempted, and pointed out to the mother that the occurrence of undoubted enteric fever in the younger boy and maid-servant, together with the prevalence of enteric in Partick—amounting by that time almost to an epidemic—along with the course of the patient's illness and the positive Widal reaction, made it a certainty in my mind that he was suffering from enteric, and that an operation would not be likely to do any good, and would probably do harm. Mrs. S. saw the force of my contention, and having much influence with her husband, who had remained in England with the older boy, and who seemed rather keen on an operation—or anything else that might save his boy—being tried, she wrote to him refusing to consent to any operation, and urging him to dissuade the doctors from insisting on operative procedures.

Some correspondence followed, and things were in this state when the domestic nurse, who had remained in England to assist the professional sick-nurses in looking after the older boy, arrived home in Partick ill, with a diagnosis of over-strain and incipient neurasthenia, as a result of her constant and devoted labours in nursing the boy. I knew her to be a douce, level-headed, but kind-hearted Scotswoman, not the least likely to be neurasthenic, and on going into her case I strongly suspected that she also was suffering from enteric, as she was listless and heavy, her temperature was up, there was a history of diarrhœa of several days' duration, the spleen was slightly enlarged, and there were suspicious spots on the abdomen. She also gave a positive Widal, and ultimately underwent a severe attack of enteric, with a tedious convalescence, in the infectious hospital for the Partick district. She had been out of Partick too long to make it at all probable that she had contracted the disease before going south with the family, and the only reasonable explanation seemed to be that she had contracted it from the boy in England, with whom she had been in close contact during the whole course of his illness, without, apparently, precautions having been taken to prevent her becoming infected from him.

Despite the domestic nurse's return home with an ill-defined illness, and in spite of my suggestion that it would probably turn out to be enteric which she must have contracted from the boy in England, the question of operation continued to be urged, but fortunately the boy began to improve and to regain consciousness, and ultimately passed into convalescence, so that the idea of operation was abandoned. When pronounced able to travel he was brought home to Glasgow in an invalid saloon carriage, accompanied by the sick-nurses who had nursed him in England. On seeing him the next morning I asked the nurses what precautions they were using in the way of disinfecting the stools, urine, feeding utensils, &c., and was told that they were not using any precautions as they did not think, nor did the doctors, that any precautions were necessary in a case of meningitis. So that despite the positive Widal and despite the occurrence of three other cases of undoubted enteric in the same household, one of which must have been contracted from the boy, the diagnosis of meningitis, distinct from and exclusive of enteric fever, had been adhered to throughout.

In cases of enteric in which the effects of the poison are manifested early and with the greatest intensity in the nervous system, with symptoms such as intense headache, photophobia, retraction of the neck, twitchings of muscles, or even convulsions, some of which were present in the above case, the condition, as Osler points out, is almost invariably diagnosed as meningitis; but he also states that the symptoms depend on intense congestion of the meninges, and not on any graver pathological condition, and that in 2,000 fatal cases there were only 11 cases of true meningitis, though with the more modern methods of diagnosis there have been several cases of meningitis in which the typhoid bacillus has been isolated in pure culture. The results obtained by lumbar puncture, together with the presence or absence of Kernig's sign, are considered to facilitate the diagnosis, but at the time I saw this boy lumbar puncture was but little known and less used, while Kernig's sign gave but little definite information, as when I saw the patient it was certainly not present, while the doctors in attendance were equally certain that it had been present to their examination.

Had it not been for the casual remark by Mr. S.'s head clerk that he had heard there were cases of enteric in Partick, I would probably have accepted the diagnosis of meningitis, as many of the boy's symptoms were suggestive of that condition, but it seemed somewhat surprising, in view of the incidence of three other cases in the same household, together with the markedly positive Widal reaction in the patient, that the diagnosis of meningitis apart from enteric was so tenaciously adhered to throughout the whole course of the case.

Case II.—*Severe epilepsy* (*status epilepticus*) *apparently dependent on a slight traumatism, and preceded by an attack of "petit mal."*

About 7 p.m. of a day in June, 1909, I was called to the house of one of my patients to see the resident governess, a well-developed, healthy-looking, and highly-educated young lady of about 30 years of age who had been taken ill shortly before. The history I got was that while partaking of the nursery tea along with the children of the family the governess had got suddenly faint and sick, and had vomited violently and noisily. A feature of the emesis had been that though of refined habits she had made no effort to restrain it, but had vomited, if one may say so, vulgarly all over her clothes and over the table. She also seemed dazed and not altogether conscious of her surroundings, and when spoken to by the lady of the house she replied in French, and addressed the lady as her aunt, calling her by her aunt's name. The lady of the house told me that the patient had only been with her a short time, that as far as she knew she had been a very healthy and robust girl, but that as she and her husband proposed going out of town they were naturally anxious about the governess's health, as they did not like to leave the children in her charge if there was anything serious in her illness, and therefore they had sent for me, though the patient herself had made light of her attack.

On seeing the patient I found her a well-developed, healthy-looking, fresh-complexioned subject, who seemed to have recovered from her illness, and who, indeed, seemed rather annoyed that I had been summoned for what she evidently regarded as quite a trivial affair. She said that a home-made cake they had had at the nursery tea had been rather doughy and "sad," and that she thought it had been it that had caused her sickness. She expressed herself as feeling quite well. Inquiry as to past illnesses revealed that about six months previously she had had a fainting attack, but there had been no sickness, and she attributed it to some slight menstrual trouble.

On examination, there seemed little the matter with her; her colour was good; her pulse was regular, and of normal volume and number; her temperature was normal; and there were no localising abdominal symptoms, so that her own diagnosis of her illness being due to the "sad" cake which had not agreed with her seemed not unreasonable, and she was ordered some stomachic sedative accordingly.

On talking over the case, however, with the lady of the house and her husband, who were very much worried over this attack of illness, as the governess had only just come to their household, and were very anxious that everything should be done for her, I remarked that the case seemed to me rather different from an ordinary attack of acute indigestion, as also of syncope, in that there had been a distinct confusion of ideas, and some unconsciousness of, or at least indifference to, her surroundings; that she had not fainted in the proper sense of the term; and that it seemed peculiar that she should have answered in French when spoken to in English, and addressed the lady of the house as her aunt. I suggested that it occurred to me as a possibility—though the grounds for such a suggestion seemed to me somewhat slender and uncertain—that the attack she had just had might be of the nature of the *petit mal* of epilepsy, and I suggested that it might be wise to have a nurse in overnight as we knew but little of the girl's past history, a suggestion which was cordially agreed to by the lady and gentleman of the house.

Subsequently I had every reason to be thankful that I had taken this precaution, for about 5 o'clock next morning I was urgently summoned by telephone by the nurse, who told me that the patient was taking violent fits, apparently of an epileptic character, at short intervals. I found the patient exceedingly ill, undergoing fits that seemed typical of epilepsy, with a well-marked tonic stage, during which the head was rotated slowly to the right side and the eyes deviated upwards, followed by clonic convulsions of great violence, during which the whole body underwent severe clonic movements, so much so that the bed shook under the patient. During the fits the patient got almost black in the face, the respiration was impeded, and the convulsions were appalling, reminding one of the severe fits of eclampsia. Indeed, except in eclampsia, and in a case of epilepsy which died in the status epilepticus, I have never seen fits of such intense severity. The fits recurred with at first an interval of perhaps ten minutes between them, but ultimately they grew much more frequent.

The occurrence of the fits, together with the vomiting of the previous evening, suggested uræmia as a possible cause, but on testing the urine I found it quite free from albumen or other abnormal constituents, and as the fits seemed likely to threaten life I administered some morphia hypodermically, but it had practically no effect in controlling the fits.

Ultimately, as the fits had become almost continuous, with but the briefest interval between them, I had recourse to chloroform to control them, but whenever the chloroform was discontinued the fits recurred with the same appalling severity and frequency as before. The patient was obviously in danger of her life, lying unconscious, and almost black in the face, and passing from one fit into another, and I therefore telephoned to Dr. Oswald at Gartnavel to see her with me, which he did about 9 A.M. He took the gravest view of her condition, and gave an unfavourable prognosis, his opinion being that if the fits could not be arrested the patient would die in a few hours, but he suggested that considerable doses of chloral by the rectum might produce a beneficial result. His suggestion was acted on, and though the chloral did not at first seem to have much effect, subsequent doses, together with inhalations of chloroform for the most severe convulsions, ultimately had the desired effect, and about mid-day the fits began to get less severe and less frequent, though the patient still remained profoundly unconscious.

Later, she recovered sufficiently to be removed to a nursing-home, where she lay for two days in a drowsy and semi-conscious condition, but free from fits. She regained full consciousness somewhat suddenly, and then it transpired that she had no recollection of what had occurred on the evening when she was first taken ill. She had no recollection of having seen me before, and did not remember having conversed, apparently quite rationally, with me when describing the onset of her illness during the nursery tea. Her mind was a blank for anything that had occurred after the attack of sickness during the nursery tea, and yet when I saw her that evening she had appeared entirely sensible and fully conscious of her surroundings, and was indeed somewhat annoyed at what she evidently considered the undue fuss that was being made over an attack of indigestion.

While she was in the nursing-home I endeavoured to get information from her which might lead to an estimate being formed as to the cause of her illness. There was no history of epilepsy in her family or in any of her relations, and she assured me that she had never previously had any epileptic attacks, but she mentioned that almost exactly six months previously she had had a fainting attack for which she had been attended by the doctor of the family in which she was then residing.

On writing to this doctor I was somewhat startled to find that the illness for which he had then seen her was precisely similar in character, though less in degree, to that for which I was attending her. There had been an attack of faintness, with some confusion of ideas, followed by typical epileptic fits of considerable severity, though apparently neither so severe nor so long continued as those in which I had seen her. There had been no apparent cause for them, there had been no previous attacks of this kind, and it had been considered judicious not to inform the patient of the real nature of her illness.

The etiology of the condition was still obscure. The patient was a very healthy-looking, robustly-made girl, but she had studied hard at Girton, had played hard at hockey and other games favoured by the athletic young womanhood of the present day, and took her scholastic studies very seriously, and perhaps even hyper-conscientiously. There were no localising ocular signs or symptoms; she had neither retinitis, optic neuritis, diplopia, nor strabismus; her urine was normal, her heart sound, and her menstrual functions averagely healthy, while no source of reflex irritation could be detected; but on being questioned as to any possible injury to the head, she stated that about a year previously, when mending a fire and suddenly rising to the erect position, she had struck her head on the edge of the mantel-piece, and had felt rather stunned for a minute or two. The immediate effects of this injury seemed to have been so trivial and so evanescent as to render it unlikely that it was the cause of the violent epileptic fits; and, moreover, careful examination of the head revealed no abnormality, or at least none detectable by external examination. But yet the injury to the head was apparently the only item in her past medical history that seemed to have any conceivable bearing on her illness, and on the theory that it might have some connection with the fits she saw, later on, a specialist in brain surgery, who apparently could not find sufficient data to warrant operative interference.

As the possibility of a recurrence of the fits obviously disqualified her from following her occupation as a governess, she went, on leaving the nursing home, to reside with her relatives in England, and I heard nothing more of her till the spring of 1914, when the lady in whose employment she had been in Glasgow told me that her late governess was then in a dying condition, that she had become more or less blind and was also mentally afflicted, and had not known any of her relatives or friends for some time. I subsequently learned that she died on the 7th of May, 1914, while I have recently learned that her father died in an asylum some time previous to his daughter's death.

These scanty data as to the young lady's death suggest that it may have been due to a cerebral tumour of which the fits I witnessed were the initial symptoms; but, in view of the father's death in an asylum, there seems also the possibility that the case may have been one of general paralysis beginning with symptoms of irritation of the cerebral cortex, though the perfectly clear mental condition of the patient after the effects of the fits had passed off, and the length of time supervening between the commencement of the fits and her death, seem rather against this theory. I have not been able to get into touch with the doctor who attended her in her last illness, so I do not know what the cause of death was certified to be, but the case remains impressed on my memory from the extraordinary severity and continuousness of the epileptic convulsions.

Case III.—*Intestinal obstruction caused by a Meckel's diverticulum.*

Late one evening I was summoned to see Miss F., a young lady of about 19 years of age, who was said to be suffering from sickness and abdominal symptoms. It was the first occasion on which I had attended her, as she had previously been the patient of another doctor who had just retired from practice. The story given me by her parents was that—though an active and healthy girl, fond of golf, tennis, and other outdoor pastimes—she had suffered from time to time from rather obstinate attacks of constipation, which, however, had hitherto yielded to pretty drastic purgatives. The present attack had been more severe and more prolonged than any which had preceded it, having lasted for the best part of a week; and though they had tried various purgatives and enemata, as recommended by their former doctor, they had failed to make any impression on the constipation, and the patient was obviously getting worse, so much so that they had got in a sick-nurse to nurse her.

When I saw the patient she was evidently acutely ill. Her temperature was up, her pulse was small and rapid, there was pain and tenderness all over the abdomen, coming from time to time in spasms of greater acuteness, and, latterly, there had been vomiting. Briefly, there were the symptoms of the acute abdomen, while she also presented to a marked degree the abdominal *facies*. No hernia could be detected, and beyond exquisite tenderness of the abdomen generally, with rigidity of the muscles and a good deal of distension, no local condition could with certainty be made out, so that, taken together with the history of obstinate constipation not yielding to any of the remedies that had been tried, a diagnosis of intestinal obstruction seemed fairly well warranted.

It was about 10 p.m. when I saw her first, and, in view of the fact that previous fairly prolonged attacks of constipation had yielded to purgatives or enemata, I thought it worth while to make one attempt to reduce the presumed obstruction by hydrostatic pressure, and accordingly, by means of a long tube passed well up into the bowel, I introduced by gravitation from a douche can several pints of normal saline, the fluid being introduced very slowly and at a very low pressure, with the pelvis elevated. It produced no beneficial result at the time, but, in the hope that it might possibly act during the night, I left her after giving her a small dose of morphia, and arranged to see her very early next morning; but, before leaving, I warned her relatives that if there was no relief by the morning operative interference would, in my opinion, be urgently called for.

I saw her next morning about 7 o'clock and found no improvement, but rather the reverse. The injection had not acted, the pain was worse, and the vomiting had increased and was tending to become stercoraceous, while the pulse also was worse. A consultation was therefore arranged with Dr. Dalziel, who saw her about 8 A.M. He agreed with the diagnosis of intestinal obstruction and also with the necessity for immediate operation, and gave the opinion that the obstruction would probably prove to be due either to a volvulus or to a band of some kind.

The patient was accordingly removed in an ambulance to one of the nursing homes, and as soon as she could be prepared Dr. Dalziel operated on her. The small intestine that presented was intensely and seriously congested, of a dull, reddish-purple colour, and considerably distended. Dr. Dalziel quickly found the site of obstruction, which, to my surprise at least, was due to a Meckel's diverticulum, about 8 inches in length, and of a lumen nearly equal to that of the small intestine, which had got whipped round the small intestine and had strangled it firmly, the distal end of the diverticulum being bound down by fresh adhesions. During the operation the patient was sick several times, and the vomited matter was distinctly fæcal both in character and in odour.

Dr. Dalziel freed the diverticulum from adhesions and disengaged it from the small intestine, but owing to the seriously congested state of the small intestine above the obstruction, he did not feel justified in doing more than relieving the obstruction and freeing the diverticulum, which was returned into the abdomen, and the wound was closed. The patient made a good recovery, and some months afterwards Dr. Dalziel performed a second operation for the removal of the diverticulum, which was entirely successful, and the patient has enjoyed normal good health ever since.

I fancy that Meckel's diverticulum as a cause of intestinal obstruction must be somewhat rare—though I do not know the statistics—and therefore I venture to record this case.

Case IV.—*Suppuration in the knee-joint apparently due to traumatism, but revealing, on operation, the gonococcus.*

This was the case of a gentleman, aged 35 years, who was seen in one of the hotels of this city. He was a member and also secretary of a technical association, which in its corporate capacity was making a tour of Scotland, paying visits to various works connected with the industry in which the members were interested, and, combining pleasure with business, many of the members had brought their wives or female relatives with them, and on "off" days were making excursions to some of the many beauty spots of Scotland. The day before I saw my patient, Mr. H., the association had done the Trossachs and Loch Lomond tour, Mr. H., as secretary, supervising the arrangements, and in getting into one of the coaches which was then on the move he had struck his right knee rather heavily against the step and had also wrenched the knee slightly. When I saw him next day there was a considerable bruise over the knee and a slight effusion, with a good deal of pain, but the injury did not seem really severe or likely to give much trouble. He was kept in bed, and the knee immobilised by firm bandaging over a layer of gamgee. He was a nervous, highly strung, rather irritable subject, worried over his inability to go on with his secretarial duties, and complained rather bitterly of the pain in his knee. He did fairly well for a day or two, when his knee got more swollen and painful, he had a rigor, his temperature shot up to a considerable elevation, and it became pretty obvious that suppuration was taking place in the knee-joint. He was accordingly removed to one of the nursing homes where, as the private rooms were all full, he had to be placed in the male ward.

Dr. Nicoll saw him with me, and considered that operation was indicated, which accordingly he performed, making an incision on either side of the knee, and draining the joint by a large drainage-tube passing through the joint from one incision to the other. A considerable quantity of sero-purulent fluid came away at the operation, and on this being sent to one of the laboratories for bacteriological examination it was found to contain gonococci in fairly large numbers.

As the patient's young wife, to whom he had only recently been married, was in practically constant attendance on him in the nursing home, and as, moreover, he was in a public ward with other patients, we had no opportunity, even if we thought it expedient, of obtaining information as to the date and history of his original gonococcal infection, but, as we had opportunity of observing at the operation and at subsequent dressings, there was no external evidence present of a gonococcal infection of the generative organs. No other joint was involved and the heart remained unaffected as long as he was in our charge, but being an irritable and impatient subject he insisted on leaving the home before he had thoroughly recovered, and travelled to his home near London on a stretcher laid out in the railway carriage, and I learned afterwards that he had made a very tedious recovery. With the history of a recent injury apparently sufficient to have caused the condition in the knee, it was rather a surprise to find the gonococcus so plentifully present, but presumably the injury had sufficiently lowered the resistance of the tissues of the knee-joint to allow the pathogenic qualities of the micro-organism to come into play.

Case V.—*Pregnancy in an unmarried subject complicated by a fibroid—An "illegal operation" followed by abortion—Sepsis—Hysterectomy—Recovery.*

Early in April of the present year, about 11 o'clock at night, I received a telephone message from a bachelor patient of mine, to say that on his return that evening from a few days' holiday he had found his housekeeper, who had been alone in the house during his absence, seriously ill with abdominal symptoms, the chief of which was violent pain of some three days' duration, that on questioning the woman as to her illness she had told him that it had to do with "women's illnesses," which he, as a bachelor, could not be expected to know about, and that she would soon be all right and did not want to see a doctor. He, however, in view of her obviously severe symptoms, had insisted that a doctor should be sent for, and had telephoned me accordingly. As I had attended the woman a year or two previously for abdominal symptoms suggestive of a mild appendicitis, I thought it probable that her present illness might be a recurrence of that former one.

On arrival, I found the patient, a woman of 35 years, lying half propped up in bed, flushed and excitable and voluble to a degree. She was a small, fragile-looking woman, with a delicate skin and a hectic-looking flush, and during the visit she talked incessantly, frequently diverging into irrelevant side issues; but from a mass of superfluous detail I was able to gather that she had been ill for some three or four days, during which the principal symptoms had been violent abdominal pain, referred generally to the lower quadrant of the abdomen. She had been constipated, but there had been little, if any, sickness or vomiting, and she complained of some difficulty and pain in voiding urine. She averred that her menstruation had been fairly regular, that she had menstruated a month ago, when she had noticed that it was unusually scanty, and that she was then menstruating again, the discharge being exceptionally profuse. Her temperature was 102°, pulse 104, and she looked fairly acutely ill.

On examination of the abdomen it was found somewhat distended and acutely painful below the umbilicus, the pain being generalised, and not referred to any one part more than another. There was no special increase of pain on deep pressure over the appendix region, but while palpating out the lower part of the abdomen a firm resistant swelling was detected in the middle of the abdomen, extending upwards almost to the level of the umbilicus. It was uniform in outline, decidedly firm and resistant to the touch, and in general outline and position corresponded pretty accurately to the impregnated uterus about the end of the fifth, or the beginning of the sixth, month, though it felt firmer and thicker in the wall than a normal pregnant uterus, and no indication of fœtal limbs or other fœtal parts could be detected in it, while no fœtal heart sounds could be heard on auscultation, nor could any irregular contractions of the tumescence be detected. The condition of the breasts, too, did not correspond to a five months' pregnancy; they were not markedly enlarged, and, as the patient was a delicate skinned blonde, there were no striking pigmentary changes in the areola, nor could milk be expressed from the nipples. The patient's positive statement that she had menstruated a month previously, though scantily, and was also menstruating then, was, if true, decidedly against the possibility of a pregnancy. Questioned as to any feeling of swelling or increasing tightness of her clothing, the patient absolutely denied any discomfort as to her clothing.

The condition, therefore, was somewhat puzzling. There was a tumour in the abdomen corresponding almost exactly in shape, size, and situation with the pregnant uterus at the end of the fifth month; but the other signs and symptoms of pregnancy seemed negative. I therefore formed the conjecture that the condition was probably a uterine fibroid, which, from the uniformity of the swelling, was likely to be of the interstitial variety. Without making a *per vaginam* examination, I told the patient that I thought she had a tumour, for which it would be advisable to call in a gynæcologist in consultation, and, having given her some Dover's powder to mitigate the severity of her pain, I was then interviewed by her master, who was exceedingly anxious about this severe illness of a valued servant. He was a middle-aged gentleman, of very methodical and precise habits, who, as a member of the legal profession, asked very particular and pertinent questions as to the nature of the patient's illness. I frankly told him that if pregnancy could be excluded—which, indeed, it seemed it could, both from her previous entire respectability and also from her apparently authentic statement regarding her menstruation—then the condition appeared to be due to a tumour, probably a fibroid, for which, in view of her temperature and pulse, I thought it necessary an operating gynæcologist should be called in, a suggestion to which he readily agreed.

Dr. Wm. D. Macfarlane saw her with me next day. She was obviously worse; her temperature was 103·4°, her pulse was 124, the pain was perhaps more intense, and the discharge from the vagina was becoming offensive in odour—in a word, she was manifestly becoming septic.

While Dr. Macfarlane was questioning the patient as to the history of her illness I had occasion to leave the room for a few minutes, and on my return Dr. Macfarlane told me that the patient had confessed not only that she knew she was pregnant—about three months gone was her estimate—but also that she had admitted to having had an illegal operation performed on her recently. With considerable assurance, and indeed with some self-satisfaction at having done what she evidently considered the best thing under the circumstances, she told us that she had been at "a man" who did those operations, but that her case had been an obstinate one, and that she had had to pay the abortionist nine visits "before things came away," but that she was sure everything had come away, and that she thought she would soon be all right now. She admitted that she had lied to me the previous evening about her clothes not being too tight for her, but adhered to her statement that she could not be more than about three months pregnant, giving data which seemed to render her statement likely to be a true one.

But though the impregnated contents of the uterus had been expelled as a result of the illegal operation, there was no diminution in the size of the abdominal tumour, which was still as large and as firm as on the previous evening, reaching almost to the umbilicus, and therefore Dr. Macfarlane also took the view that there was an abdominal tumour in addition to the pregnancy, probably a fibroid, and as the woman was acutely ill and obviously becoming septic, he kindly agreed to take her into his wards in the Royal Samaritan Hospital. I subsequently learned from him that on a complete examination the cavity of the uterus was found to be of the size corresponding to a three months' pregnancy, so that in this respect at any rate the woman had told the truth.

The subsequent history of the case may perhaps be best told in the words of a *résumé* of the case which Dr. Macfarlane's resident kindly sent me:—"On 22nd April Dr. Macfarlane operated on your patient, Miss M., by a sub-umbilical incision, and found the tissues very soft, suggesting a pregnancy. The left ovary, which was cystic, was removed, and a sub-total hysterectomy was performed. Section of the uterus afterwards showed an interstitial fibroid with commencing degeneration. There was the scar of placental implantation in the uterine cavity. The patient made a good recovery."

The combination of an early pregnancy in an unmarried and apparently highly respectable woman, along with a degenerating fibroid and a criminal abortion to boot, rendered this case a somewhat puzzling one, more especially as the patient's wilfully false statement that she was actually menstruating when first seen, seemed borne out by the presence of a tolerably profuse sanguineous discharge from the vagina which, of course, as events turned out, must have been hæmorrhage due to the recently performed criminal abortion. The combination of circumstances, though perhaps not absolutely rare, seemed to me sufficiently unusual to warrant me in placing this case on record.

SIMPLE PEPTIC ULCER AND MALIGNANT DISEASE OF THE STOMACH.

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(*Continued from* p. 413.)

II. *Microscopic examination of test meal and vomitus.*—Often very valuable information may be obtained by this examination, and in any complete investigation of a digestive derangement it ought to be undertaken. It will be obvious that the microscopic characters of a test meal will largely depend on the ingredients of which it is composed. Thus the returned dinner will differ materially from the test breakfast.

In all cases, both normal and abnormal, certain elements intrinsic to the gastric secretion will be present, *e.g.*, epithelial cells, mucus, and micro-organisms. When great excess of mucus is associated with a great abundance of columnar epithelial cells it indicates that they have a common origin from the gastric mucosa.

Certain *micro-organisms* are frequently seen. The *leptothrix buccalis* may be swallowed with the saliva, and has no necessary pathological significance. *Yeast* is found in both simple and malignant stenosis. The cells may occur *discretely* or be in *chains*, the latter form being more characteristic of malignant disease. *Sarcinæ ventriculi* flourish only in the presence of free hydrochloric acid. Their detection in the gastric contents strongly contra-indicates malignant disease, and is in favour of retention from simple pyloric stenosis. By exception I have found sarcinæ in cases of chronic indurated duodenal ulcer which has become the seat of carcinomatous change. But in such cases, where the dual condition exists, the peptic ulcer dominates the situation, and, for a time, masks the presence of the malignant disease. The *Boas-Oppler or lactic acid bacillus* is a large non-motile bacillus occurring either in straight or elbowed rods. These organisms are only rarely found in a returned meal containing a sufficiency of free hydrochloric acid. They stain brown with Gram's solution. They can act on certain sugars and form *lactic acid*, and, indeed, when these bacilli are found we can assume the presence of lactic acid. Various *parasites* may appear in the test meal, such as ascarides and, less commonly, segments of the various tape worms.

A few drops of the test breakfast, picked up by pipette from the bottom of the conical glass in which it has stood, should be placed on a slide and mixed with a drop taken from the surface, covered with a cover-slip, and examined under a high and low power with, and without, iodine staining.

After a test breakfast the solid ingredients will be composed principally of starch granules showing varying degrees of alteration commensurate with the amount of digestion they have undergone. If the stomach has not been washed out previous to the introduction of the test breakfast, there may be remnants from other meals if pyloric difficulty exists. The capacity of the stomach to digest starch may be gauged from this examination. The amount of digestion varies with the degree of acidity. When hyperchlorhydria exists the amount of starch digestion will be in inverse ratio to the degree of acidity. It is under such conditions that we usually find *amyldyspepsia*.

Care should be taken not to mistake a starch granule for a leucocyte. To determine the amount of digestion in the starch a very weak solution of iodine should be run under the cover-slip. This solution should be made from a drop of the tincture diluted with a sufficient amount of water or alcohol to make it pale sherry-coloured. The pure tincture should never be used. It will be recalled that the digestion of starch, begun in the mouth by the saliva, is continued in the stomach by the ptyaline, swallowed with the food, till arrested by the rise of the acid tide. The advantage of prolonged mastication and thorough insalivation will be obvious in the light of this fact. All farinaceous food, however soft, should be subjected to the most complete mastication in all cases associated with difficulty of starch digestion. The stain reactions of iodine differ with the amount of digestion it has undergone. *Dextrin*, unaltered starch, stains a deep pure purple-blue; *erythrodextrin*, the intermediate product, stains a magenta or burgundy colour; while *achroödextrin* remains unstained by the iodine.

Meat fibres showing little change in structure are very characteristic of conditions associated with complete failure of peptic digestion, *e.g.*, malignant disease. *Vegetable cells* may also be present in cases of gastric stasis where the stomach has not been washed out prior to the ingestion of the test meal.

III. *Chemical examination of the stomach contents.*—For special purposes it may be necessary to estimate the presence and activity of *pepsin* and *rennet* in the test meal. When there is an adequate amount of active pepsin it may be recognised by the well-digested appearance of the returned breakfast. As a rule, when hydrochloric acid is sufficiently present there will also be an adequate amount of pepsin. This rule is, however, not invariable.

The test breakfast should be filtered, immediately after its withdrawal, through filter paper. The manner in which it filters and the appearance of the filtrate are instructive. When much mucus is present, as in many forms of gastritis, filtration is diagnostically slow, and the filtrate is commonly too clear. When good digestion of the breakfast has taken place, and when mucus is not present in excess, filtration will be rapid, and the filtrate more or less turbid.

Having obtained a sufficient amount of gastric juice, the following routine examination should be made:—

For Free Hydrochloric Acid.

A. Qualitative tests.

1. *Congo red.*—For general purposes this is the most convenient test. It may be employed either as a liquid reagent or much more conveniently in the form of a paper. The presence of free hydrochloric is indicated by the change of the terra-cotta congo red into a blue colour of various depths. The purity and depth of the blue must be noted. When experience of the use of congo red has been gained one can almost make with it a rough quantitative estimate of the free hydrochloric acid. If the red colour be replaced by a brown, or dirty brown-blue, organic acid is present in greater or less proportion. An entire absence of change in colour in the congo red indicates a total

absence of free hydrochloric and other acids. It should be noted that ordinary blue litmus is of no use as a differential test of free hydrochloric acid, for it is turned red by any acid.

2. *Dimethylamidoazobenzol.*—This reagent may be used exactly as congo red. The canary yellow paper is changed, in presence of free hydrochloric acid, into a coral-pink of a depth varying with the amount of acid present. If there be an admixture of organic acid the yellow colour is dirty or brownish, while in the entire absence of all acids there is no change in colour.

3. *Resorcin, tropeolin 00,* and *phloroglucin-vanillin* are all reliable qualitative tests, but they are not so convenient as the congo red or dimethylamidoazobenzol papers.

B. Quantitative estimates.

In the test meal from the normal stomach there will be found "free" and "combined" hydrochloric acid. A test breakfast, composed as it is largely of starch, has no great affinity for hydrochloric acid. The hydrochloric acid rapidly combines with the small proteid content until its affinities are satisfied. All that is secreted over and above the amount utilised by the proteid remains as free hydrochloric acid. Thus it is that only one hour need elapse till a test breakfast is removed. At the expiry of this time free hydrochloric acid will have formed in sufficient quantity for its proper estimation. If a delay beyond this period takes place, and the gastric motility is normal, nothing will be found in the stomach when the stomach-tube is passed. Combined hydrochloric acid may be neglected in those cases where free hydrochloric acid is present in normal amount, but its estimation is important in cases of simple achylia. In addition to the estimation of free hydrochloric acid, that of "total acidity" is necessary. It should be remembered that "total acidity" comprises (1) the free hydrochloric acid, (2) the combined hydrochloric acid, (3) varying amounts of organic acids, and (4) the acid salts (phosphates). When there is a normal or excessive amount of free hydrochloric acid the organic acids may be disregarded, as the formation of these is inhibited in direct proportion to the amount of hydrochloric acid present.

A sufficient amount of free hydrochloric acid in the chyme is important from the many functions it has to perform. It is antiseptic; it promotes the gastric motility; it activates the pepsinogen, and with the hydrochloric acid plays an important *rôle* in the digestion of flesh foods; and its presence in the chyme is necessary for a healthy intestinal digestion.

When hydrochloric acid is absent we have the condition of "achlorhydria," and if pepsinogen be also wanting we have a true "achylia." Usually an achlorhydria is associated with an absence of proenzymes. In certain cases these may persist, and must be tested for.

The amount of free hydrochloric acid in the test breakfast may be greatly influenced not only by local lesions in the stomach, but by general diseases. The more experience one has of digestive derangements the less dogmatic does one become as to the significance of alterations in its amount. Nevertheless information of great diagnostic and therapeutic value is to be gathered from an estimation of the free hydrochloric acid in the test meal. In the great majority of cases of peptic ulcer the amount of hydrochloric acid in the test breakfast will be in excess of the normal. A proportion of these cases shows no increase in the free hydrochloric acid content, and by exception a gastric ulcer may coincide with a hypochlorhydria. After an Ewald's breakfast, in normal conditions, the amount of free hydrochloric acid in the filtrate may be stated as from 0·1 to 0·2 per cent. Any quantity much above this and approaching 0·3 per cent may be regarded as a well-marked hyperchlorhydria, which would be in favour of the diagnosis of duodenal ulcer if the clinical symptoms and other chemical findings of this condition were present. A persistent hypochlorhydria and an achlorhydria are suggestive of carcinoma when associated with other abnormalities in the test meal, and with the signs and symptoms of that disease. In many constitutional disorders achlorhydria and simple achylia may be found. Thus, in pernicious anæmia a persistent absence of hydrochloric acid is almost an invariable and early sign of the disease. A similar absence of the acid is commonly met with in cirrhosis of the liver, exophthalmic goitre, certain stages of chronic parenchymatous nephritis, and many other wasting diseases.

The quantitative estimation of free hydrochloric acid is easy to carry out. It is based on the principle that a given quantity of decinormal solution of sodium hydrate will completely neutralise a known amount of hydrochloric acid. The decinormal solution is put into a graduated burette, and 10 c.c. of the gastric filtrate into a porcelain saucer. The apparatus is identical with that required for the estimation of sugar in the urine by the Pavy-Fehling method. The figure at which the decinormal solution stands in the burette is noted prior to beginning the estimation. The exact point of neutralisation of the free hydrochloric acid by the decinormal solution is recognised by the presence of an "indicator." A few drops of a solution of dimethylamidoazobenzol is added to the 10 c.c. of the filtrate. In presence of free hydrochloric acid this indicator turns a bright red colour. The alkaline solution is now dropped from the burette into the filtrate till the red colour disappears, and is replaced by a yellow colour, which remains unchanged by the further addition of the alkaline solution. This is the "end-reaction." The exact amount of decinormal solution used is then read off on the burette, and the calculation made. One c.c. of the 1-10 normal solution of sodium hydrate is equivalent to, and therefore neutralises, 0·00365 of a gram of hydrochloric acid. The amount may be expressed either in percentage or in decinormal units of solution of sodium hydrate.

Total acidity.—The same technique is employed as for the estimation of free hydrochloric acid. Phenolphthaleine solution, which is colourless in acid media, turns red the moment the solution is slightly alkalised. A few drops of this indicator are added to the 10 c.c. of gastric filtrate, and the amount of the decinormal solution of sodium hydrate required to attain the end-reaction is noted. The total acidity may be conveniently expressed by the number of cubic centimetres of sodium hydrate solution required to produce the end-reaction. The normal total acidity, after a test-breakfast, is most commonly between 55 and 60. In gastric, and especially in duodenal ulcer, the total acidity is high, corresponding to the excess of free hydrochloric acid which is usually present. When the free hydrochloric acid is low, or normal, and the total acidity high, this discrepancy suggests the presence of organic acid.

A simpler method of ascertaining simultaneously the amount of free hydrochloric and total acidity is by the use of Weiss' tube. This simple tube can be had from most vendors of medical instruments, and gives results practically as reliable as those obtained by the burette. The tube is graduated for free hydrochloric acid and total acidity in percentage. A double indicator of dimethylamidoazobenzol and phenolphthaleine is used. The lower part of the tube, below the graduation, is marked ½-M. and M.—for a half and whole meal. When the filtrate obtained from the extracted meal is too small in amount to fill the tube to the mark M., a half quantity may be used (to ½-M.), and distilled water added up to the M., and the final readings doubled. The colour reactions on neutralisation of the free hydrochloric acid and total acidity with the decinormal solution of sodium hydrate are the same as those described above. The levels at which the end-reactions are observed are read off on either side of the tube—on the right hand the percentage of free hydrochloric acid, and on the left the total acidity.

When free hydrochloric acid is present abundantly, the practitioner can dispense with the more complex tests for pepsinogen and renninzymogen. It is rare, indeed, to find these enzymes wholly absent, except in cases of very complete atrophy of the gastric mucous membrane. Such cases constitute the true achylias. If, on the addition of the proper proportion of hydrochloric acid to the achlorhydric gastric filtrate, it becomes endowed with the power of converting albumen into soluble peptone, we have proof of the presence of pepsinogen. Thus, in all cases where we wish to estimate the presence of a sufficient and active peptic digestion, the presence of peptone in the filtrate, after a peptone-free meal, will supply us with this evidence. For the practitioner, the easiest test of the presence of pepsin is the *indirect* one for the detection of peptone rather than the more complex *direct* tests of Mett, Fuld, or Jacoby-Solms. The simplest procedure for this indirect method is as follows:—To 5 c.c. of filtered gastric juice in a test-tube add an equal quantity of Esbach's reagent, mix, set aside and note the amount of precipitate formed. An ordinary Esbach's tube may be conveniently used for this investigation. A rough but useful estimate can thus be made of presence and activity of pepsin without any incubator or elaborate technique.

Alterations in the amount of free hydrochloric in the gastric filtrate from a test breakfast are of considerable clinical significance when correlated to the history, symptoms, and signs of digestive disorder. A *hypochlorhydria* is occasionally found in peptic ulcer, but a progressive diminution in the amount should always make one suspect carcinoma of the stomach. It has been asserted—I think erroneously—that carcinoma situated elsewhere than in the stomach is commonly associated with a hypochlorhydria or an achlorhydria. Perhaps this is true in advanced cases of the disease from the profound constitutional disturbance which supervenes, but it is not uncommon to find a sufficiency of hydrochloric acid in cases of cancer of the rectum, colon, uterus, mamma, and elsewhere. Cholelithiasis, cirrhosis of the liver, and many wasting diseases are accompanied not infrequently by an a- or hypo-chlorhydria. Achlorhydria or achylia prevails in cancer and pernicious anæmia as well as in other affections with systemic disorder.

OCCULT BLOOD IN THE GASTRIC CONTENTS AND FÆCES.

The great diagnostic value of occult blood in the gastro-intestinal contents has already been insisted on—indeed, its persistent absence would throw grave doubt on the diagnosis of peptic ulcer. Occult blood should be looked for both in the gastric content and in the fæces. Greater diagnostic reliance can be placed on the discovery of occult blood in the fæces than in the gastric contents. The tests are so delicate that the smallest trace of blood will give a positive reaction. If great straining has accompanied the passage of the stomach-tube, minute quantities of blood may contaminate the extracted meal even when no ulcer exists. If the contents are vomited or extracted with ease, and occult blood can be persistently demonstrated, it may confidently be regarded as pathologic. The same care must be taken to exclude the contamination of the fæces with traces of blood. For this reason, when possible, a solid portion of the stool should be used rather than a sample of liquid fæces. The presence of a leak from piles or fissures may superficially coat the surface of the stool with a trace of blood. When the stool is solid a small portion, the size of a lump of loaf sugar, should be transfixed with a clean mounted needle, and a thin layer of all the surfaces cut off. The remaining portion should then be held under a stream of warm water, which will ensure the removal of any blood not intimately mixed with, and an inherent part of the fæces. It is also essential that the patient should be put on a *hæmoglobin-free diet for three days*, and on the following day a sample of the stool should be taken for examination.

No medicine containing iron must be taken during the three days of preparatory diet. The technique for this investigation is practically identical for the gastric contents and the fæces.

A. Benzidin test.—This test is very delicate, and is the one almost always given in the clinical text-books as the best. Its extreme delicacy makes it *absolutely unreliable*, for it is practically always positive. If a diagnosis of peptic ulcer has been made on the strength of a positive reaction with this test, many a one not suffering from this affection at all must have been subjected to a useless course of treatment. *Any normal gastric content or fæces will give a more or less positive reaction.* Enzymes, ptomaines, sweat from the fingers, and other substances will react and give the characteristic blue colour of a positive reaction. As these ingredients are never absent or capable of elimination from the gastric content or fæces the test is worthless. It should no longer find a place in the text-books of medicine.

B. Guaiac test.—The guaiac test, equally applicable for the gastric contents and fæces, is very delicate and free from fallacy when carried out in this manner:—

1. Take a small portion of the prepared fæces and grind it in a mortar, with glacial acetic acid, into a thin cream. Pour into a clean test-tube. If blood be present we then get acetic hæmatin formed.

2. Add to the fæces in the test-tube a slight excess of methylated ether and invert slowly many times. By this means we get an ethereal extract of acetic hæmatin. Set the test-tube aside to permit of the separation of the ether to the top. If spontaneous separation does not take place readily filtration may be resorted to.

3. Make, in a perfectly clean test-tube, a weak solution of

guaiac resin by dissolving a minute pinch of the powdered resin in about 5 c.c. of 70 per cent alcohol.

4. To the guaiac solution add an equal volume of peroxide of hydrogen and mix. This is the test reagent.*

5. Float the ethereal extract on the top of the test reagent, taking care to get as little intermixture of the two fluids as possible. *A blue ring* will form at the junction of the two fluids in the presence of occult blood. The depth of the blue and the rapidity of its formation will be proportionate to the amount of blood present.

C. Aloin test.—The same procedure is used for this as for the guaiac test. We use, however, a strong solution of aloin obtained by dissolving a large pinch of aloin in the 70 per cent alcohol. An equal part of peroxide solution is then added. At the junction of the ethereal extract of the gastric content or fæces a *red ring* is positive.

SUMMARY OF THE CHIEF POINTS DIAGNOSTIC OF PEPTIC ULCER.

(1) *Pain* with definite relationship to the ingestion of food; with definite time of onset according to the situation of the ulcer; usually relieved by vomiting, alkalies, and sometimes by additional food, and occasionally by change of posture. (2) *Tenderness and muscular rigidity* over some part of the gastric region—more commonly over the upper belly of the right rectus than elsewhere. (3) *Symptoms of hyperacidity* —heart-burn, waterbrash, flatulence. (4) *Hæmorrhage*, sometimes macroscopic (hæmatemesis, melæna), more commonly occult. The many other symptoms which may be present are of less importance, though they may afford additional evidence of the presence of peptic ulcer.

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* If the guaiac and the peroxide solution develops a blue tint after standing some time the test reagent is not sound. This is almost always due to the peroxide of hydrogen solution. Peroxide solution deteriorates rapidly on keeping and not infrequently contains impurities. Thus a positive reaction may result even in the absence of blood. It is therefore best to allow the peroxide and guaiac solution to stand aside for at least fifteen minutes before employing it. If no blue tint develops it may be used as the test reagent. I have for long been in the habit of using pergenol tablets to prepare a fresh solution of peroxide, and have found this free from error.

TREATMENT OF GASTRIC AND DUODENAL ULCER.

As peptic ulcer is a very relapsing condition, healing and opening under varying circumstances, it will be manifest that treatment should not be limited to the actual ulcerative process, but should also be preventive. The *prophylactic treatment* consists in removing, as far as that may be possible, any bad hygienic condition, in insisting on attention to the teeth, mouth, and throat, and in keeping the bowels free. The exact nature of the diet is not of greater importance than the manner in which it is cooked and eaten. Very slow mastication is of prime importance when once a patient has had ulceration. To ensure thorough insalivation, solids should be eaten without fluids, and there should be an interval of not less than five hours between the three principal solid meals. About three hours after each meal a glass of hot water is useful to compensate for the withdrawal of fluids from the breakfast, lunch, and dinner, and also to neutralise any over-acidity which may gather towards the end of the digestive act.

The *treatment of the active ulcer* must fulfil certain requirements. It is doubtful if it ever be justifiable to adopt an ambulatory treatment of peptic ulcer. It may be regarded as bad practice to allow a patient to be out of bed if there be any blood, visible or occult, in the stomach content or in the stool. For the promotion of healing of a peptic ulcer, rest is as essential as it is for the cure of an ulcer elsewhere. It is true, however, that no amount of medical treatment—rest, diet, medicine—will permanently heal certain very chronic and indurated gastric and duodenal ulcers. For these the only reliable method is surgical interference. If the physician is in doubt, from the history and symptoms, as to the duration and character of the ulcer, he should first of all give medical treatment a fair trial. A recent peptic ulcer may be expected, under favourable conditions, to heal in about three weeks. If treatment be resisted, and relapse comes soon in spite of sound treatment, a gastro-enterostomy ought to be advised. The chief *essentials* for successful treatment are *physical and physiological rest with the maintenance of an adequate nutrition* of the patient. The exact procedure we are able to follow will necessarily depend on, and be modified by, the presence or absence of *serious bleeding.* The management of severe hæmorrhage from peptic ulcer may demand preliminary attention, to the exclusion of all other treatment. It is a disputed point whether it is justifiable to give any nutriment by the mouth while bleeding is still in progress. It is argued that oral alimentation, by maintaining functional gastric activity, will only promote bleeding. My own experience is that it is better and safer to give frequently small quantities of egg albumen, which has a very great capacity of absorbing and combining hydrochloric acid, thus promoting gastric rest, and diminishing, rather than increasing, the tendency to hæmorrhage. Rectal feeding is recommended as the surest way of obtaining gastric rest, while nothing is given by the mouth at all. But does rectal alimentation ensure rest to the stomach? It is known that the introduction of nutrient enemata evokes a degree of gastric peristalsis, and defeats this desired end. Another reason for withholding *nutrient* enemata is that they not only fail to nourish the patient, but increase and hasten the onset of auto-intoxication. After a few days' rectal alimentation, with complex nutrient enemata, acidosis comes on. A strong odour of acetone may then be detected in the breath, and this substance found abundantly in the urine. It is true that acetonæmia quickly supervenes on starvation, and is also a feature of many gastro-intestinal disorders; but it comes more quickly still when nutrient enemata are employed. Any advantage arising from these is due to the water, and not to the nutrients they contain. Normal saline solution, with some glucose added, will maintain more efficiently the patient's strength, and delay or prevent auto-metabolism of tissue and the onset of acetonæmia.

The *dietary in peptic ulcer* must be fluid, bland, nutritious, and capable of absorbing and combining a large amount of acid—in short, be *a food and medicine combined.* All food materials which would mechanically excite the motor function of the stomach or increase its secretory activity are contra-indicated. Too often the dietary advised constitutes nothing but a slow process of starvation; and when the patient's gastric symptoms have subsided, and the ulcer is healed, another course of treatment for debility and neurasthenia has to be instituted.

It is quite certain that if, in our efforts to attain physiological rest for the stomach, we lower the nutrition and vitality, we shall not be doing our best to raise the general and local gastric recuperation of the patient. The method of *von Leube-Ziemssen* is largely employed for the treatment of peptic ulceration. Essentially it is an attempt to nourish the patient entirely by rectum during the period of bleeding and later by the oral administration of various light fluid foods. Warm poultices are kept constantly applied to the epigastrium (except in cases of active bleeding) for the relief of pain. From one to two drachms of Carlsbad salt dissolved in about half a pint of water is recommended to be taken an hour before breakfast. I believe this large volume of fluid is not advantageous, and may, by distending the stomach, interfere with the reparative processes. I much prefer the *Lenhartz* principle of dietary. It fulfils, to a remarkable degree, the requirements of a scientific dietary for peptic ulcer. It need not be carried out rigidly, but may be modified. I have found the following method answer well:—If bleeding be a feature of the case then only one egg, with an equal volume of milk, should be given daily, in the form of a well-beaten egg switch, in hourly doses. As long as bleeding lasts the eggs and milk must be very little increased, but when it ceases one egg and its equivalent quantity of milk may be added each day till twelve are being taken. When there is little or no bleeding we may begin right away with from four to six, and increase them as indicated. If the patient can sleep he ought not to be disturbed with this dietary during the night. Such a highly nitrogenous diet is occasionally badly borne unless the kidneys are kept active and the waste products washed out of the system. It is permissible to administer small quantities of cold distilled water, in 2-drachm doses, every three hours in the intervals between the egg diet. As there is almost always great thirst, more particularly after bleeding, further relief can be obtained by the introduction into the rectum of 8 ounces of normal saline solution, with or without glucose, every six hours. At the expiry of two weeks a small amount of carbohydrate may be added to the egg albumen. Perhaps Benger's food, digested at first for an entire hour, is the safest and most convenient form in which to give the starch. During the third week 2 to 3 ounces may be taken three or four times daily, and a proportionate volume of egg albumen withdrawn. At the end of the third week larger quantities of these foods, as well as a greater variety of articles, may safely be given.

Medicinal treatment should be directed against the prevailing tendency to amyxorrhœa and hyperacidity. In duodenal ulcer, especially, the results obtained by gentle lavage of the stomach with a 1 in 2,000 solution of silver nitrate are often excellent. It is a potent stimulator of the glands and induces a secretion of mucus, which is one of nature's most important protectors of the gastric mucosa against auto-digestion. The hyperchlorhydria and hypersecretion so usually associated in peptic ulcer are best dealt with by alkalies and belladonna. The pernicious habit of taking large doses of sodium bicarbonate to obtain relief from pain should be discouraged. The aim should be not to get alkalisation of the chyme but only a degree of neutralisation. To alkalise the chyme produces a wholly abnormal condition, and seriously interferes with the functions of intestinal secretion and digestion. Very large doses of the soluble alkalies are also objectionable because of their after-action in causing a fresh stimulation of acid secretion. A preparation of magnesia acts equally well, and is free from these adverse influences. Such a combination as this checks both hyperacidity and hypersecretion, and induces gastric rest :—

℞—Magnesii carbonatis pond., . . .		4 drs.
Bismuthi carbonatis, ...		3 ,,
Liquoris atropinæ, ...		12 mins.
Aquæ chloroformi, ...	ad.	6 ozs.—M.

Sig.—One tablespoonful thrice daily, or oftener if pain be persistent.

When the patient begins to take solid food we have in olive oil one of the most reliable remedies both as a curative and prophylactic agent. It is nutrient, aperient, and a powerful depressant of the over-secretion of acid. The best results may be anticipated from its long-continued use. When the peptic ulcer is healed the oil may be given in doses of from one to four teaspoonfuls immediately before or after food.

(*To be continued.*)

VINCENT'S ANGINA.

By JAMES HARPER, M.A., M.B., Ch.B.,
Surgeon to the Throat, Nose, and Ear Department, Royal Hospital
for Sick Children Dispensary, &c.

The throat affection known as Vincent's angina has lately been occupying the attention of the medical profession. Up till comparatively recently it has not received the notice that its importance warrants. In certain of the literature referring to the subject there would seem to be a great diversity of opinion as to what this condition really is, although this difference of opinion is only apparent. In some books the matter is scarcely mentioned at all.

Various names have been given to the affection by different observers, such as ulcerative tonsillitis, or pseudo-membranous tonsillitis. Both these names are too vague, and Vincent, who described a form of membranous sore throat in which he found a spirillum associated with a fusiform bacillus, has given to it the name of Vincent's angina. This is the name by which the condition is now generally known.

As we have already said, there seems to be a great diversity of opinion regarding the affection. Some authors describe it as a chronic disorder of the throat, accompanied by slight membranous formation, and of no great importance. They consider that the only importance which need be attached to it is the fact that it takes a long time before it disappears from the throat, but that in the meantime it will cause the patient no great inconvenience. Other writers merely call attention to the affection because of the ulcers which are apt to be formed in the throat, and they again lay little stress on its real importance. By many, little consideration is given to the effect on the general constitution of the patient. Indeed, some report that the effect on the general health is *nil.* While each of these authors is correct in his description of the condition, they seem to have missed the important point that it may take on different forms in different patients.

The lesions are composed of greyish-white patches of membrane, surrounded by a red inflamed areola. They usually involve one tonsil, but they may spread to the soft palate, the pharynx, the larynx, or even the trachea. There may only be one patch, or several. On removal of the membrane the area underneath bleeds freely. The microscopic examination of a portion of the membrane stained with fuchsin shows a fusiform bacillus twice as long as it is broad, and pointed at both ends, and accompanying it there is always a spirillum 10 or 20 μ in length. This is the only fusiform bacillus which is found in the mouth, and its presence, in association with a spirillum, is undoubted evidence of the existence of the disease. I am not aware that these bacteria have ever been grown on any culture medium.

Diphtheria and secondary or early tertiary syphilis are the two conditions for which this disease is most likely to be mistaken. Indeed, many cases of supposed diphtheria which give a negative result on culture would, if they were examined for the organisms, be found to be cases of Vincent's angina. Again, many cases of supposed syphilis which do not respond to treatment might, with considerable advantage, be examined for the presence of the organisms of this disease.

The initial symptoms of Vincent's angina vary much in severity. In many cases the patient complains of a slight sore throat, with little or no constitutional disturbance, and he may discover a patch of membrane in his own throat by accident. In others, while the throat condition may be very slight, there is great constitutional disturbance. Headache may be severe, and there is great weakness, while the temperature may rise to 103°. In others, there is a severe pain in the throat, greatly aggravated by swallowing or speaking; the breath becomes fœtid; the sub-maxillary glands enlarged and tender; and the patient is obviously very ill.

The extent of the lesion in the throat bears no relation to the severity of the symptoms. The patch may be small and remain so, or spread rapidly as in diphtheria. The disease tends to persist for several weeks, and, unless energetically treated, is very apt to recur. Local treatment is of first importance. Various agents have been tried, such as iodine, or sulphate of zinc, but these have only had a very limited success.

Cauterising with the galvanic cautery has been employed with very little success; indeed, in some cases it would seem rather to aggravate the condition. I have obtained the best results by painting the affected area once with a solution of perchloride of mercury (1 in 100), and then painting the throat daily with a solution of nitrate of silver (30 grs. to the oz.). If at the end of a week I find either the fusiform bacillus or the spirillum to be still present in the throat, I again paint it with the perchloride solution. It is rare that more than two applications of the perchloride are necessary; indeed, in the majority of cases one application suffices. In judging as to whether the throat is really clear of infection or not, I have found that if either of the organisms be present in the throat at the end of a week, and if the treatment be stopped, the condition is very liable to recur; so the presence of either of the organisms may be considered to be a positive proof of the continuance of the infection.

The three cases which I propose to describe exemplify three of the different forms which Vincent's angina may take on.

Case I.—I was asked to see in consultation a boy, aged 6½ years, who had been suffering from a slight sore throat of three days' duration. He had complained of a headache and was feverish at night, but otherwise was perfectly well, and it was with difficulty he was kept in bed. He had complained of no pain in the throat, and it was only when the family doctor examined his throat on finding his temperature to be 102° that he saw several whitish patches on the right tonsil. The morning temperature was 102·5°, and the evening temperature 103°. A throat paint consisting of perchloride of iron was given, but the spots gradually increased. The high temperature and the absence of pain in the throat led the doctor to suspect that this was not an ordinary case of follicular tonsillitis. I was asked to see the patient on the third day. Beyond a slight headache, the boy said he was perfectly well. The tongue was furred, and the breath foul. The right tonsil was covered, in its posterior half, by a dirty greyish membrane, the removal of which caused bleeding. There was no enlargement of the sub-maxillary or cervical glands, the temperature was 103°, and the pulse 100.

The appearance of the membrane did not exactly correspond to that of diphtheria. There was not the degree of inflammation which one would expect in a case of diphtheria of three days' duration. In fact, all the redness was round about the membrane; also, the temperature was not that usually found in a case of diphtheria on the third day. It was too high. I removed a portion of the membrane, and on staining it with Loeffler's methylene blue we found the typical fusiform bacillus with numerous spirochætes. This showed the condition to be Vincent's angina.

I advised that a strong purge should be administered, and swabbed the tonsil with perchloride of mercury (1 in 100). Twelve hours later the temperature had fallen to normal and the pulse to 80. For four days the throat was swabbed once daily with nitrate of silver (60 grs. to the oz.). At the end of that time no fusiform bacilli nor spirochætes were to be found on examination of several swabs from the throat. The membrane had disappeared on the third day after commencement of the treatment. For ten days afterwards the patient's throat was swabbed daily with nitrate of silver (15 grs. to the oz.), and since then there has been no recurrence of the disease.

Case II.—I was asked to see a medical man who had taken suddenly ill with a severe sore throat. He had started out on his professional duties that morning, but had had to return home owing to excessive weakness. For five days previously he had had a very slight pain on swallowing, but when I saw him swallowing was causing him so much pain that he was refusing to take food. He was suffering from severe frontal headache, with an intense burning pain in the throat. He complained of great weakness. The temperature was 99°, and the pulse 78. On examination of the throat there was a very slight general inflammation over the whole of the fauces, but on the left side behind the posterior pillar of the tonsil a piece of greyish-white membrane, about half an inch long and an eighth of an inch broad, was to be seen, surrounded by an intensely inflamed areola. The great weakness of the patient, and the severe constitutional symptoms, combined with the very small rise in temperature, led one to suspect diphtheria, but the microscopic and cultural tests gave negative results. The following evening I had a small portion of the membrane, which had now become much broader, examined for the organisms of Vincent's angina. These were found in large numbers. In the meantime the patient had been taking aspirin, which he found considerably relieved the headaches. In addition, I had advised teaspoonful doses of Paton's oral anti-diphtheric serum while waiting on the result of the examination of the swab for diphtheria. This was now stopped. A strong purge was administered, and the whole of the fauces painted with a solution of perchloride of mercury (1 in 100). Next day the patient's general condition was much improved, though he was suffering from excessive weakness. For two days, four times daily, the throat was painted with a two per cent solution of formalin in glycerine, at the end of which time no membrane was to be seen. Microscopic examination of a swab from the throat showed fusiform bacilli, but no spirochætes. I then advised that the formalin should be stopped, and the throat swabbed once daily with a solution of nitrate of silver (60 grs. to the oz.). After three more days no spirochætes nor fusiform bacilli were to be found on examination. The nitrate of silver was then stopped, and the patient swabbed out his throat morning and evening with the formalin solution. It was only after a week from the commencement of his illness that the patient was able to leave his bed, and it was another week before he was able to resume his duties. Since then he has had no recurrence of the throat condition.

Case III.—A young man, aged 26 years, had been suffering from an ulcerated condition of the throat for fifteen months. Twelve months previously he had consulted a doctor because he had spat up some blood. He was told that he had an ulcer in his throat and was given a bottle. This he continued for several weeks, but he received no benefit from it. When I was consulted regarding the condition, I found the patient had lost a stone and a half in weight. The sub-maxillary glands on both sides were much swollen, and there appeared to be fluctuation in several of them. The tissues at the angle of the jaw on each side were much swollen. These swellings gradually became less till they met in the middle line beneath the chin. The mouth was in a very foul condition. There were several carious teeth; the tongue was slightly swollen and much furred. There were several large ulcers to be seen on the tonsil and posterior pharyngeal wall. These ulcers had sharply defined margins, while their bases were covered by a dirty greyish-white membrane. There were four small ulcers on the posterior pharyngeal wall, while there was one large ulcer on the right tonsil and two on the left; indeed, the right tonsil had to a great extent disappeared. The temperature of the patient was 101°, and the pulse 95. This patient had been under anti-syphilitic treatment for six months, but with no result. The Wassermann reaction was negative. I was inclined to view the case as being either one of chronic glanders or Vincent's angina. The patient, who had worked in a shipyard, had not come into contact with horses to any great extent. Still one had to bear in mind the possibility that he might have been infected with glanders. I examined a scraping from one of the ulcers for the organisms of Vincent's angina. The film was swarming with spirochætes, and the typical fusiform bacilli were present in large numbers, along with numerous staphylococci.

In this case we had evidently to deal with ulcers in the throat due to the organisms of Vincent's angina, but with a staphylococcic infection superadded. I curetted the ulcers in the throat until what appeared to be fairly healthy tissue was reached, and swabbed the base of each ulcer with pure carbolic. Several deep incisions were made into the swellings at the angle of the jaw. A considerable quantity of foul smelling pus escaped, and a drainage tube was inserted. Two days later the whole of the pharynx was swabbed with perchloride of mercury (1 in 100), and each day for a fortnight with nitrate of silver (60 grs. to the oz.), and on every alternate day for about a month. In addition to this the patient was given a mixed vaccine, and the wounds in the neck were treated on general surgical principles. These gradually healed, and when I last heard of the patient he was in very good health. At the end of a month the swellings in the neck had practically disappeared, while the ulcers on the posterior wall of the pharynx and on the left tonsil had healed over; but there was still a very small ulcer on the right tonsil from which the organisms of Vincent's angina were absent, and he was suffering very little inconvenience.

These three cases show us how this same disease may appear in what are apparently totally different forms. Vincent's angina is not the rare condition which one would be led to suppose, nor is it the benign affection which some books would lead us to believe it to be. The fact that it may follow an acute, subacute, or chronic course, should make us all the more watchful to diagnose the condition at the beginning. Those cases of suspected diphtheria which give a negative result on bacteriological examination should be examined for the organisms of Vincent's angina, while cases of suspected syphilis with ulceration of the throat which do not yield to treatment and in which the Wassermann reaction is negative, should undoubtedly be examined for the organisms of this disease.

There is another type of case where I feel certain many cases of Vincent's angina are missed, viz., those cases of apparent follicular tonsillitis where the general symptoms do not correspond with what one expects in this condition.

If all such cases be examined for the fusiform bacillus in combination with the spirochæte, I feel sure that many more cases of Vincent's angina will be found to exist than is commonly supposed.

Obituary.

ON SERVICE.

Surgeon-Captain THOMAS L. G. STEWART, M.B., Ch.B. Glasg., R.A.M.C.

We regret to announce that Surgeon-Captain Thomas Louis Grenet Stewart has died as the result of wounds received in operations in the Dardanelles. The son of Mr. Matthew Stewart of Levern House, Barrhead, Captain Stewart, who was 27 years of age, was educated in Barrhead, and afterwards in Hutcheson's School, Glasgow. Thence he proceeded to Glasgow University, where he studied medicine, and where he took the degrees of M.B., Ch.B., in 1911. After graduation he obtained a resident appointment at the Borough Hospital, Birkenhead, and thereafter served on the staff of several Liverpool hospitals, including Grafton Street Fever Hospital and Parkhill Sanatorium. He joined the Royal Army Medical Corps immediately after the declaration of war, and after three months in Shotley Hospital he was transferred to the Naval Brigade with the rank of Captain, proceeding to the Dardanelles in February. He had a family connection with the Army Medical Service, his grandfather, Dr. Risk, having been surgeon in charge of the British forces in Turkey during the Crimean War. His brother, Private Marshall Stewart, is at present in France with the 5th Scottish Rifles.

Major JAMES CRAIK TAYLOR, M.B., C.M. Glasg., R.A.M.C.

We regret to announce the death of Major J. C. Taylor, which occurred on 17th June as the result of wounds received in action. Major Taylor was the elder son of the late Mr. James Taylor, governor of Barlinnie Prison, and a nephew of the late Mr. James Craik, manager of the Central Argentine Railway. He studied medicine at Anderson's College and at Glasgow University, where he took the degrees of M.B., C.M., in 1896. He practised first in Stewarton, where he was physician to the Stewarton Hospital, and after his return from South Africa, where he served as surgeon during the South African War, he settled in practice in Newlands, Glasgow. An officer of the R.A.M.C. (Territorial Force), he was called up last August, and was stationed at Stirling until six weeks ago. He then left for war service, being attached to the 4th Royal Scots Fusiliers. Major Taylor is survived by a widow and a family of two sons.

CURRENT TOPICS.

Appointment for Sir Donald MacAlister.—By an Order in Council, dated 27th May, 1915, His Majesty has appointed Sir Donald MacAlister, K.C.B., M.D., LL.D., D.C.L., to be a member of the governing body of the Imperial College of Science and Technology, South Kensington, for a term of four years from 1st June, 1915.

Appointments.—The following appointments have recently been made:—

Arthur J. Ballantyne, M.D., F.R.F.P.S., to be Honorary Consulting Ophthalmic Surgeon, Glasgow Royal Maternity and Women's Hospital.

F. J. Jayne, M.B., C.M.Glasg. (1895), to be District Medical Officer to the Hay Union.

Royal Navy (21st May): Temporary Surgeon R. Tennent, M.B., Ch.B.Glasg. (1914), to *Pembroke*, additional for Chatham Hospital, to date 22nd May.

2nd June: Temporary Surgeon A. G. Stewart, M.B., Ch.B. Glasg. (1899), to *Victory*, additional, to date 1st June.

Royal Army Medical Corps (25th May): To be temporary Lieutenants—G. T. MacLean, M.B., Ch.B.Glasg. (1900); S. V. Telfer, M.B. Ch.B.Glasg. (1910); C. G. Mackay, M.B., Ch.B.Glasg. (1914); A. M. Clark, M.B., Ch.B.Glasg. (1915); J. R. Pate, M.B., Ch.B.Glasg. (1915).

1st June: To be temporary Lieutenants—J. R. Wortabet, M.B., C.M.Glasg. (1891); E. Robertson, M.B., Ch.B.Glasg. (1912).

3rd June: To be temporary Lieutenants—W. Wallace, M.D. Glasg. (M.B., 1887); J. C. Turnbull, M.D.Glasg. (M.B., 1900); A. D. Blakely, M.B., Ch.B.Glasg. (1914); W. S. Stalker, M.D. Glasg. (M.B., 1899); J. M'Queen, M.B., Ch.B.Glasg. (1897).

11th June: To be temporary Lieutenants—G. Gardner, M.D.

Glasg. (M.B., 1899); J. B. Baird, M.B., Ch.B.Glasg. (1910); J. J. Robertson, M.B., C.M.Glasg. (1900); C. S. Thomson, M.D.Glasg. (M.B., 1906); D. M. Livingstone, M.D.Glasg. (M.B., 1900); J. Coutts, M.B., Ch.B.Glasg. (1906); R. M. Marshall, M.D.Glasg. (M.B., 1900).

12th June: To be temporary Lieutenants—H. Yellowlees, M.B., Ch.B.Glasg. (1910); J. M. Campbell, M.B., C.M.Glasg. (1890); J. Buchanan, M.B., Ch.B.Glasg. (1915); J. M. Young, M.B., Ch.B.Glasg. (1914); W. H. M'Kinstry, M.B., C.M.Glasg. (1887); T. M'Kinlay, M.B., Ch.B.Glasg. (1910).

15th June: To be temporary Lieutenants—R. Broom, M.D. Glasg. (M.B., 1889); D. T. C. Frew, M.B., Ch.B.Glasg. (1911); R. Donald, M.D.Glasg. (M.B., 1906); A. U. Millar, M.B., Ch.B. Glasg. (1913); A. B. M'Pherson, M.B., Ch.B.Glasg. (1904); T. M'Cririck, M.D.Glasg. (M.B., 1906); D. Stewart, M.D.Glasg. (M.B., 1905); D. Taylor, M.B., Ch.B.Glasg. (1908); H. K. Wallace, M.D.Glasg. (M.B., 1896); B. M. Hunter, M.B., Ch.B.Glasg. (1909); T. Bennett, M.B., Ch.B.Glasg. (1903); W. A. Milne, M.B., Ch.B. Glasg. (1902); J. Green, M.B., C.M.Glasg. (1896); D. Lawrie, M.B., C.M.Glasg. (1881); W. Doyle, M.B., C.M.Glasg. (1891); G. J. Fraser, M.B., Ch.B.Glasg. (1915); R. M'Lean, M.B., Ch.B. Glasg. (1913); A. S. Wilson, M.B., Ch.B.Glasg. (1911).

Territorial Force (25th May): Granted temporary rank as Lieutenant-Colonel whilst serving at Edmonton War Hospital —S. Mort, M.D.Glasg. (M.B., 1903), F.R.C.S.E. To be temporary Captain—J. Paton, M.D.Glasg. (M.B., 1901).

28th May: 1st Lowland Field Ambulance—F. M. Robertson, M.B., Ch.B.Glasg. (1913), to be Lieutenant.

7th June: 1st Lowland Field Ambulance—A. D. Buchanan, M.B., Ch.B.Glasg. (1911), to be Lieutenant.

15th June: Major W. C. Murray, M.B., C.M.Glasg. (1892), from 1st Lowland Field Ambulance, to be Deputy Assistant Director of Medical Services, Lowland (Reserve) Division.

Scottish Command Orders (25th May): Colonel D. J. Mackintosh, Assistant Director of Medical Services, 2/1st Lowland Division, in addition to his other duties, is appointed to supervise the administration and organisation of all military, war, and Territorial general hospitals in the Glasgow area.

Lowland Casualty Clearing Station (28th May): The undermentioned to be Lieutenants—Lieutenant S. Robertson, M.B., Ch.B.Glasg. (1914), from 1st Lowland Field Ambulance; Lieutenant S. A. Macphee, M.B., Ch.B.Glasg. (1911), from 2nd Lowland Field Ambulance; Lieutenant A. Rankine, M.B., Ch.B. Glasg. (1914), from 1st Lowland Field Ambulance; W. Cullen, M.B., Ch.B.Glasg. (1914).

3rd Scottish General Hospital (12th June): D. Watson, M.B., C.M.Glasg. (1891), to be Captain, whose services will be available on mobilisation.

Indian Medical Service (8th June): Lieutenant-Colonel C. Mactaggart, C.I.E., M.B., C.M. Glasg. (1885), to be Colonel; Captain J. B. D. Hunter, M.B., Ch.B.Glasg. (1902), F.R.C.S.E., to be Major; Lieutenants J. H. Hislop, M.B., Ch.B.Glasg. (1908), and J. W. Jones, M.B., Ch.B.Glasg. (1910), to be Captains.

GLASGOW ROYAL INFIRMARY.—The board of managers of Glasgow Royal Infirmary at a meeting on 9th June appointed Mr. Robert Morrison Smith, C.A., secretary to the Infirmary in succession to Mr. Peter Rintoul, C.A.

PRESENTATION OF LL.D. ROBES TO DR. G. S. MIDDLETON.—On Friday, 18th June, there took place in the boardroom of the Royal Infirmary a ceremony which arose out of the announcement that the University of Glasgow was to confer the degree of LL.D. upon Dr. G. S. Middleton, late senior physician to the infirmary. That announcement conferred honour upon Dr. Middleton and through him upon the infirmary; and its visiting staff, most of whom had been his colleagues, decided in recognition of the occasion to present him with the appropriate robes. Besides the staff there were present Dr. Thom (superintendent), Miss Melrose (matron), Sister M'Guire, and former members of Dr. Middleton's nursing staff.

The presentation was made by Dr. Adams, who said that Dr. Middleton was a distinguished graduate in Arts in Aberdeen University, a graduate with honours in Medicine of Glasgow University, ex-president of the Association of Hospital Physicians of Great Britain and Ireland, ex-president of Glasgow Medico-Chirurgical Society, and, besides being a well-known physician in Glasgow, had made many contributions to clinical medicine, particularly in diseases of the heart, kidneys, and nervous system. Dr. Middleton was beloved by them all, and was known to them as a man tenacious of purpose, pursuing his own course regardless of possible consequences to himself or his professional progress. He regarded the conferring of the degree as an honour, not only to Dr. Middleton in person, but through him to the Royal Infirmary.

Sister M'Guire, who is still on active nursing duty in the infirmary, and who was a nurse in the infirmary when Dr. Middleton was a resident forty years ago, assisted Dr. Middleton to don the gown and hood.

Dr. Middleton, in acknowledging the gift, said that he appreciated very highly the kindness which had prompted it, and referred in generous terms to the cordiality of the relationship which had always existed between him and his colleagues and the members of his nursing staff.

At the graduation ceremony on 21st June, Professor Gloag, Dean of the Faculty of Laws, said, in presenting Dr. Middleton for the degree of LL.D., " Dr. Middleton is a graduate in Arts of the University of Aberdeen and of Medicine in Glasgow. He was at one time a member of the teaching staff of Glasgow University, as assistant to Sir William Gairdner, in the Chair of Practice of Medicine. Since then his life has been largely devoted to the service of the Royal Infirmary, of which he has for many years been senior physician, and to the Royal Hospital for Sick Children. To these institutions his services, both professionally and in questions of administration, have been such as to entitle him to be ranked with those to whom the whole community owes a debt of gratitude. His pen has furnished many contributions to the science and practice of medicine, in addition to his work as editor of the *Glasgow Hospital Reports.*"

MONKLANDS MEDICAL SOCIETY: PRESENTATION TO DR. ANDREW.—At the annual business meeting of the Monklands Medical Society held on 27th April, James Andrew, M.D., D.P.H., was presented with a cheque by the members of the Society as a mark of their high appreciation of his valuable services as secretary of the Society and of the Coatbridge Medical and Panel Committees under the National Health Insurance Act.

Bequests to Glasgow Hospitals.—By the will of the late Miss Agnes Kerr, of Newton Place, Glasgow, the following bequests, free of legacy duty, have been made to Glasgow hospitals:—To the Royal, Western, and Victoria Infirmaries, each £1,000; to the Glasgow Eye Infirmary, £500; to the Glasgow Cancer Hospital, £200. There is also a number of bequests to religious and charitable institutions, and the residue of the estate has been left to the Association for the Relief of Incurables in Glasgow and the West of Scotland.

Glasgow Hospital for Diseases of the Ear, Nose, and Throat.—The annual meeting of patrons and subscribers to this institution was held on 9th June at the hospital, 27 Elmbank Crescent, Mr. Robert Gourlay, LL.D., presiding.

The chairman expressed regret at the circumstances which necessitated the absence of Colonel Charles M. King, the chairman of the directors. At a meeting of the directors, Dr. Gourlay stated, they had agreed to put on record in the minutes an expression of their heartfelt sympathy for Colonel and Mrs. King in the grievous loss they had sustained by the death of their son, Major Andrew Buchanan King, from wounds received in action. The directors felt that it would be some solace to the parents that their son died in the service of a glorious cause—the defence of home and country and civilisation. The directors were pleased to know that Lieut. King, Colonel King's younger son, who had also been wounded, was now progressing satisfactorily. Dr. Gourlay added that Colonel King had served that institution faithfully and well for a long period of years. He had been chairman of directors for thirty-five years.

Dr. Thomas Barr submitted the annual medical report, in the course of which it was stated that 3,342 patients (1,750 males and 1,592 females) presented themselves for treatment during the year. As each patient was seen on an average about four times, 13,667 attendances, or about 47 daily, were made at the hospital. The patients included 1,211 children under 15 years of age, 1,219 persons between 15 and 30 years of age, and 912 over 30 years of age. Dr. Barr stated that a considerable number of soldiers and Belgian refugees had been treated at the hospital since the war began, not only as dispensary patients, but as indoor patients when operations were required. Recruits were thus sometimes rendered acceptable by treatment who would otherwise have been rejected.

Professor T. K. Monro, in moving the adoption of the medical report, said that the hospital was worthy of a special place in the history of the development of medical science because of the pioneer work that was done by Sir William Macewen, in conjunction with Professor Barr, in working out the treatment of complications in the head arising from ear diseases. In his work at Stobhill, Professor Monro added, he came in contact with an enormous number of cases of ear diseases among the soldiers—old cases that had broken out afresh, and new cases arising among men who had been at war stations throughout the winter. The young medical men who were sent to the front were supposed to be able to deal with all kinds of work, including necessarily a great deal of ear work, and a hospital of that description was very useful for equipping these young men for their professional duties.

Dr. J. Wallace Anderson seconded, and the report was adopted.

The directors, in their report, stated that there had been an increase of £20 in the subscriptions as compared with the previous year, but in the donations of patients and their friends there was a shortcoming of £52. Since the end of the year a legacy of £25 had been received from the estate of Miss Shedden. A deposit receipt for £76, 16s. 10d. was presented to Dr. Barr by Mayor W. Scott, of Tunbridge Wells, to be used for any extra appliances required for the hospital.

On the motion of the chairman the report was adopted.

THE RISE IN INFANT MORTALITY.—A deputation from the Women's Co-operative Guild was received on 10th June by Mr. Walter Long at the Local Government Board. It called attention to the increase in infant mortality, and urged the passing of immediate legislation dealing with the care of maternity and infancy.

Mr. Long, in a sympathetic reply, said that anything that could be done to protect infant life and render more secure the early days of the children who were to become the men and women of the future ought to be done, and any gaps in the existing legislation ought certainly to be filled up. While he was in office he should be only too glad to help in this good work. At this moment of supreme national trial the preservation of infant life and the lives of our women was of increased importance. In the few months that had passed since August the population of a great town had been removed from among us—the best, the bravest, and the finest of our manhood. It was, therefore, our bounden duty to see that everything was done that could be done to ensure the wellbeing of the community.

He understood the deputation to desire that the powers of county councils should be extended. He was informed it was necessary to extend the powers of municipal corporations in the same direction. Their powers did not enable them to deal with health visitation, with the care of the infant, or with the care of the mother before and after birth in the way in which it was desired it should be done. Mr. Long proceeded:—I am prepared to accept the position of my predecessor, and I shall be very glad indeed to introduce legislation making the Notification of Births Act compulsory all over the country. Mr. Samuel was successful in obtaining a grant in respect of this expenditure from the Treasury, and the balance that will fall on local authorities and on the rates is small. I am bound to say that I think in this case the bargain is a fair one. By caring for the children you are doing something that will reduce the rates of the locality, because a healthy people costs the rates less than an unhealthy people. The rates, therefore, should bear their share. The State, on the other hand, gets the advantage of a more virile and healthy population than would otherwise be the case.

At present it is practically impossible to pass controversial legislation. The House of Commons in the main, if not in entirety, is thinking wholly of the war, and how the war may be brought to such a conclusion as every patriotic citizen would wish. While controversial legislation is impossible, I have reason to believe that a Bill on the lines suggested will not be opposed, and it will give me great pleasure to put such a Bill before Parliament.

FOOD ADULTERATION.—Mr. F. W. Harris, Corporation chemist and analyst under the Food and Drugs Act, gives, in his annual report on the work of the Corporation Chemical Department, interesting particulars of the methods of food adulteration, in which he says the scientific ingenuity of the "food faker" is far ahead of the legislative measures adopted for his control.

The total number of food and drug samples examined during the year amounted to 2,050, comprising 1,114 official samples and 936 informal samples, showing an increase over the corresponding total for last year of 780. Of the 1,114 official samples examined 232 were certified as adulterated, 860 as genuine, and 22 as being of doubtful quality. This proportion of adulterated samples is equivalent to 20·8 per cent, compared with 15·8 and 11·9 per cent, the corresponding percentages for the two previous years.

The adulteration of milk is brought about, crudely, by the addition of water, or, scientifically, by dilution with separated milk in carefully estimated quantities, thereby reducing its nutritive value, and causing a monetary loss to the purchaser. This effect can be produced with such facility that, if scientifically conducted, it frequently baffles detection, so that the effective control of the milk supply demands the unremitting and astute attention of the inspectors. The consequence is that the number of milk samples examined is a gradually increasing one. This year 465 samples of sweet milk, 47 of cream, and 32 of skimmed milk were examined, a total of 544 compared with 370 for the previous year. There were certified as adulterated 171 samples of sweet milk, 3 of cream, and 6 of skimmed milk, a total of 180 samples. No less than 76 per cent. of the adulterated samples were certified solely on account of deficiency in their most valuable ingredient, namely, fat; 9·4 per cent were certified as being both deficient in fat and containing added water, whilst the remaining 14·6 per cent contained added water. These statistics, Mr. Harris says, confirm the accuracy of the opinion expressed in former reports, that the fraudulent practice of mixing separated milk with sweet milk, thereby artificially reducing the quality, is the most serious and widespread offence. The total suppression of this reprehensible practice would be rendered feasible if the Board of Agriculture made it compulsory to ear-mark all separated milk.

The commercial development of the scientific process known as hydrogenation of oils, by which liquid oils are converted into solid fats, has further increased the choice of raw materials from which butter substitutes are manufactured. Several of these products, derived from cotton seed, whale, and other oils, had been submitted to exhaustive examination. Throughout the year 269 samples of butter were examined, 43 of which were certified as adulterated, in that their fat contents consisted entirely of foreign fat.

Dealing with medicated wines, Mr. Harris says that in his report to the Chief Sanitary Inspector on samples of medicated wines he made the following comment:—"These wines are fortified wines, containing with one exception, a high percentage of extractive matters, due to the presence of carbo-hydrates, derived partly from malt extract. These ingredients, together with a small quantity of nitrogenous matter found in the samples, and represented by the nitrogen figure, constitute the nutritive principles, whilst the stimulating effect of these wines is due entirely to their alcoholic strength." He further states that "the alcoholic strength of these wines is very high, their intoxicating effect being about twice that of ordinary claret. As the analyses prove, the proportion of meat extract contained therein is trifling, a fact readily anticipated, because alcohol cannot contain meat extract in solution. In previous reports I have commented on the analyses of different varieties of proprietary foodstuffs, emphasising the point that at present no procedure exists for controlling the composition of these widely advertised commodities, consequently local authorities are powerless to protect the interests of the public. It should be made compulsory to state on each label the proportion and nature of the nutritive constituents of all proprietary foodstuffs and the alcoholic strength of medicated wines. That there exists urgent necessity for the remodelling of our chaotic laws on this question of important public interest receives striking support from the evidence and recommendations of the Select Committee appointed to consider and inquire into the sale of patent and proprietary medicines and medical preparations."

It is perhaps needless to add anything to this forcible statement of the therapeutic inactivity of medicated wines. The fact nevertheless remains that many of these preparations continue to receive medical testimonials which, printed in advertising pamphlets as emanating from "——, M.D.," tend to increase the public reliance on their value. The advertiser doubtless reckons with some confidence on obtaining praise from a few indiscreet practitioners in return for the free gift of a palatable drink.

AYRSHIRE AND DUMBARTONSHIRE TUBERCULOSIS SCHEMES.—In a communication recently received from the Local Government Board by the County Council of Ayrshire and the Town Councils of Ayr and Kilmarnock, it was stated that in the opinion of the Scottish Office the proposal to pool the expenses incurred by the various authorities for the non-institutional treatment of tuberculosis would be illegal, in view of the fact that there was no statutory authority to combine for the purpose of non-institutional treatment. In a further letter read at Ayr Town Council the secretary said that he was now directed to state that the Board had had under consideration the question of what expenses might properly be regarded as falling under the category of expenses for non-institutional treatment of tuberculosis. It appeared to the Board that the joint scheme of the three combining authorities might be so organised that the tuberculosis officers, assistant tuberculosis officers, and other medical men concerned with tuberculosis under the scheme would be part of the staff of one or other of the dispensaries in the Ayrshire area. The work of the dispensary would include not only visits by the patients to the dispensary, but visits by the dispensary doctor to the patients when such patients were unable to attend the dispensary. The only kind of non-institutional treatment remaining would be such "domiciliary treatment" as would not be conducted through the dispensary. If the work of the dispensaries were organised in that way, all treatment of cases domiciled in their homes would radiate from the dispensary and would legitimately be regarded as "institutional treatment," and it might be found to be administratively possible to embrace within the scope of the work of the dispensary the treatment of all cases that were resident in their homes.

The Sanatorium Committee of Clydebank Town Council have met with representatives of Dumbarton Town Council and discussed the question of a tuberculosis scheme, previous negotiations with the County Council and the Dumbarton Town Council for a joint tuberculosis scheme having resulted in a deadlock, owing to Dumbarton Town Council's decision not to join in the scheme. At the meeting Provost Buchanan said that in the Dumbarton Town Council the proposal to combine was defeated by a narrow majority, that their own local scheme did not meet with the approval of the Local Government Board, and that they had decided to reopen negotiations with Clydebank Town Council and the County Council with the view to combination. After discussion the representatives were informed that while Clydebank Town Council would favour a proposal to combine with the burgh of Dumbarton rather than provide a scheme solely for Clydebank, they would prefer a combination of the three local authorities, provided such combination was made under agreement, the basis of which would be on the same lines as formerly suggested, with representation given on population and valuation according to the current figures.

GENERAL MEDICAL COUNCIL: THE PROFESSION AND THE WAR.—In the course of his presidential address, delivered on 1st June at the summer meeting of the General Medical Council, Principal Sir Donald MacAlister dealt at some length with the organisation of the medical profession in war time, and with the probable shortage of entrants in the course of the next few years. He said—The response to the country's call from members of our own profession has been especially prompt and generous. Many thousands of our brethren have freely given themselves and their sons, postponing every other claim to the demands of national duty. Members of the Council are fully sharing both in the service and in the sacrifice. To those of our colleagues who are to-day mourning in proud sorrow the loss of gallant and promising sons we offer the tribute of our heartfelt sympathy. And we deepen our resolve to ensure by every service within our power that such sacrifices shall not have been made in vain. The call for qualified physicians and surgeons to take up duty with the Forces has become more and more insistent with the growth of the new armies. Our professional reserves, at no time large, have been drawn upon to the full. Throughout the kingdom organised efforts are in progress for such a readjustment of civil practice as will liberate all who can possibly be spared for the medical service of the Navy and Army. In these efforts the Scottish Emergency Committee and local committees of the British Medical Association, with the effective co-operation of members of this Council, have taken a leading part. The services of qualified women have been freely offered and accepted for many of the places that are now vacant at home. Senior students enrolled in the combatant ranks have been recalled by the War Office and directed to complete their curriculum with a view to qualification for the Royal Army Medical Corps. Special qualifying examinations have been held by the licensing bodies for candidates whose curriculum was completed. And from overseas have come large numbers of our Colonial colleagues who are possessed of qualifications registrable in this country, and so are eligible for commissions in our Army. By the opportune action of the Belgian Government and of the Privy Council, the Executive Committee was enabled to give effect to the application of Part II of the Medical Act (1886) to Belgium, with the result that about 60 Belgian doctors of medicine have become legally qualified to practise in Britain, and to occupy professional positions in public and other institutions.

From all these sources we have obtained timely and valuable help, but they must, if possible, be supplemented. If we are to make good the losses in the Army Medical Service we must accumulate larger reserves. The casualty lists—and, I am proud to add, the lists also of rewards for conspicuous gallantry—testify to the magnitude of these losses. We must endeavour to fill the vacant places by men whose training and skill can be guaranteed, and whose devotion is not inferior to that of their fallen comrades. We look with confidence to the medical schools and corporations to aid us in our endeavour to maintain even in the present emergency the standards of teaching and of testing which we regard as essential to efficiency.

The inquiries to which I referred in my address last November regarding the number of students actually in attendance on courses of medical study at the several schools have shown that at the end of 1914 there were considerably over 1,000 fewer than in 1913. The recall of senior students from active service to resume their professional studies has had a favourable effect on the fifth year now drawing to a close, but we must expect during the next few years a falling off of some 250 per annum in the number who become qualified as medical practitioners.

In the same address I called attention to the fact that from certain of the provinces of Canada able and efficient surgeons were desirous of coming to the aid of the mother country, but were hindered by difficulties created by their local registration laws. Encouraged by the reception accorded to my remarks here and in Canada, I ventured to communicate with the various medical authorities concerned, and to point out once more the Imperial bearings of the question of reciprocity. The response has exceeded all my expectations. From Ontario, British Columbia, Saskatchewan, Manitoba, and Alberta have come messages, often by cable, stating that legislation has already been initiated for the removal of existing provincial restrictions, and that the provinces desire that reciprocity with this country may be established at the earliest date. When the necessary steps are completed—and I have reason to think that no obstacles need be apprehended on this side of the Atlantic—all the provinces of Canada will have severally entered into reciprocal relations with the United Kingdom. The way will then be open for the application of the Medical Act (1886) to the Dominion as a whole as it is now open to the Commonwealth of Australia. Thus, by the concurrent action of the separate provinces, the Dominion Medical Act—whose operation has hitherto been restricted so far as Imperial relations are concerned—will assume a more comprehensive character, and the medical federation of the Empire will be at length accomplished. Canada possesses schools of medicine of the highest repute, and we may confidently count on receiving from them a further supply of graduates qualified in all respects for the medical service of the State, and legally entitled to practise in any part of His Majesty's dominions.

Second Scottish Ambulance Unit.—The second foreign service unit of the St. Andrew's Ambulance Corps left Glasgow for Aldershot on 5th June. The first unit of 100 men was organised in October, 1914, and about the end of May, at the request of the military authorities, steps were taken for the enrolment of another contingent of similar strength. The time allowed was short, but the members of the Corps responded heartily to the appeal of the Association, and no difficulty was experienced in obtaining the requisite number of men. The members of the second unit, who are drawn from all parts of Scotland, met in the Bath Hotel prior to their departure, and were entertained to supper by the chairman and council of the Association. Colonel D. J. Mackintosh, M.V.O., chairman of council, presided, and among others present were:—Lieutenant-Colonel Thos. Stout, commandant, St. Andrew's Ambulance Corps; Lieutenant-Colonel Wm. Boyd Anderson, Lieutenant-Colonel Napier, Dr. J. Wallace Anderson, Mr. W. R. Ferguson, general secretary of the Association; Mr. James Macpherson, Mr. David Cooper, and Mr. Nicol Paton Brown.

The chairman said that when they were asked last week by the War Office to provide 100 men of the St. Andrew's Ambulance Corps for service abroad with the Royal Army Medical Corps they scarcely expected that their appeal for volunteers would meet with so speedy a response. The Corps has contributed many volunteers to the service of the country. Immediately following the outbreak of war the home military hospitals were staffed by their home hospitals reserve, and the increased personnel necessitated by the expansion of these hospitals had been supplied from the same source. In October last, at the request of the War Office, they provided a unit of 100 men for foreign service. That unit left Glasgow on 26th October, and after training at Aldershot it was drafted in two lots, one to No. 10 Casualty Clearing Station in France and the other to one of our hospital ships. This unit had rendered a good account of itself, and had been warmly commended by its officers. In addition to these units, the Corps had given many recruits not only to the R.A.M.C., both Regulars and Territorials, but to the firing line, and at the present time upwards of 1,000 men of the St. Andrew's Ambulance Corps were serving with His Majesty's forces at home and abroad. With such large calls on their resources it said much for the patriotism of Scotland's ambulance men that this second request to raise a foreign service unit should have been crowned with success within one week of the publication of their appeal. In these days when so many calls were necessarily being made on the public it was, he thought, a pardonable source of satisfaction to the council that the appeals of the St. Andrew's Ambulance Association for men had been so uniformly successful. In his capacity as chairman of the council of the Association he desired to thank the men of the second foreign service unit for having so cheerfully and so promptly volunteered for service. He wanted to assure them of the council's deep sense of gratitude, and to wish them God-speed and a safe return to their homes.

SCOTTISH WOMEN'S HOSPITALS.—The admirable character of the work done by the unit of the Scottish Women's Hospitals which was detained in Malta for a fortnight, while on its way to Serbia, in order to deal with wounded from the Dardanelles, has received glowing acknowledgement in the following letter from Lord Methuen, Governor of Malta, to the Committee of the Scottish Women's Hospitals for Foreign Service in France and Serbia:—

"As I have written to Sir Ralph Paget, it is not in my power to express my gratitude sufficiently for the help given me by the Serbian Unit. There came the first avalanche of wounded, and no further aid from home was due for a fortnight, so sooner than see my men neglected in order to nurse Serbians, I took it on myself to detain the unit for one fortnight. They leave here blessed by myself, surgeons, nurses, and patients alike, for they have proved themselves most capable and untiring workers. They never made the smallest difficulty, and would not have been sorry had I ordered them to remain another week."

NEW MILITARY HOSPITALS FOR GLASGOW AND CAMBUSLANG.—The military authorities have taken over the Western District

Hospital of the Glasgow Parish Council for the accommodation of wounded soldiers, its patients having been removed and distributed among other similar institutions conducted by the Council. Oakbank Hospital, which is situated in Possil Road, was erected about eleven years ago. The equipment is therefore in all respects modern, and includes up-to-date appliances for the use of x-rays and an excellent operating theatre. It is within easy reach of the principal railway termini, and its situation thus makes it particularly suitable for military use. It has accommodation for 350 cases, and space can, if necessary, be found for a larger number.

It was announced at a meeting representative of the Cambuslang churches, held on 24th May, that the Government had requisitioned the new school at Gateside, Cambuslang, as a military hospital, which will be conducted under the superintendence of the Lanarkshire Red Cross Society. Lanarkshire doctors will be asked to provide a medical staff, and ladies having a knowledge of Red Cross and first-aid ambulance work will probably be asked to give assistance. The building, which is lighted throughout by electricity, and contains all modern conveniences, will accommodate at least 200 beds.

RED CROSS SOCIETY: SCOTTISH BRANCH.—The article upon the workings of the Scottish Branch of the Red Cross Society which appeared in our May issue brought the record of its proceedings down to the end of March. On the 31st of that month, at the annual general meeting of the Scottish Automobile Club in Edinburgh, the chairman, Mr. D. P. Maclagan, W.S., devoted a portion of his address to a review of the connection of the club with the Red Cross Society, in the work of which, both at home and abroad, he said that the club had been most useful and energetic. The club secretary was convener of the Headquarters Transport Committee, and had been ably assisted by many of the members and others in the organisation of a first-class service of ambulance cars. In Glasgow, since the war began until the end of February, nearly 22,000 sick and wounded had been carried, the car mileage amounting to 66,750, while in Edinburgh similar transport arrangements, under the able management of another member of the club committee, had carried about 7,500 patients, their mileage running up to about

26,000; and in Dundee and Aberdeen, in respect of which he had not the figures, much good similar work had been accomplished by and through members of the club. He paid a tribute to the work which had been done by Mr. Inglis Ker as secretary of the Motorist's Ambulance Committee, with whose aid a fund amounting to £70,000 had already been raised for the sending out of motor ambulance convoys to our soldiers at the front. He had no hesitation in saying that had not the club and its facilities been available the Red Cross Ambulance work in Scotland would not have been as well done as it had been.

A matinée held at the Pavilion Theatre, Glasgow, on 27th March, realised for the funds of the French Red Cross Society the sum of £146, 17s. 5d.

On 9th April the Society stated that since the war began there had been issued from the store at St. Andrew's Halls, of garments and other articles:—To France, 132,464; to Stobhill Hospitals and Royal Infirmary, 26,271; to various other outlets, mainly local auxiliary hospitals and convalescent homes, 47,189; to Belgium, 23,524; to Serbia, 19,455; to Springburn Hospital, 11,110; to Indian hospitals, 9,115; to the Navy, 5,860; to the R.A.M.C., 4,840; to the Canadian contingent, 2,410—total, 282,238. In addition, there had been sent out 118 cases books and magazines, 139,480 cigarettes, 409 lb. tobacco, pipes, walking sticks, games of all kinds, writing materials, &c.

The honorary treasurers of the Scottish Branch also announced the receipt of payment of the balance of the Scottish Fruit Trade motor ambulance fund, which amounted in all to £1,132, 12s. 3d. The bulk of this was expended in the purchase of two motor ambulance waggons.

A booklet issued about the same time by the Branch contains an interesting review of its work since the beginning of the war. A preface is contributed by Sir George T. Beatson, K.C.B., chairman, who gives a historical account of the Red Cross movement from its inception. The various activities of the Branch are described in detail, and an appeal is made on behalf of the funds. With regard to the Scottish Hospital at Rouen, it is stated that "the extension of the Scottish section from time to time, at the request of the military authorities, is a safe measure of the value of the work which has been done there. As many as 300 patients have been received into the hospital in one day, and the Scottish section has never failed to answer to the demands made upon it. The section is at present partially located in a converted rifle range, in which ample provision is made for the comfort of the patients. The rifle range, however, only accommodates part of the section, and a considerable portion of it is still under canvas. The military authorities have been most appreciative of the work of the section, and their treatment of the medical staff has been of the most generous character. The health of the personnel on the whole has been highly satisfactory, and their labours in France have met with the warmest appreciation from the military authorities and patients alike." Other features of the Society's work which are described include the Red Cross Auxiliary Hospital at Springburn, the motor ambulance service at home and abroad, transport arrangements, and the despatch of stores and clothing. The booklet, which is profusely illustrated, contains a map showing the four districts into which Scotland has been divided under the Society's scheme of organisation, and deserves preservation as a record of the very effective work of the Branch.

Towards the end of the month an appeal was made for the funds of the Scottish Women's Hospitals in France and Serbia, and it was stated that for this purpose the sum of £50,000 was wanted, of which £12,000 had already been subscribed. The conditions under which these hospitals have had to work in Serbia, and the praises which their work has deservedly earned, are fresh in the minds of all, and the sum asked for should be readily obtained.

About the same time the Branch began the organisation of a Red Cross sale on the lines of that held at Christie's, and gifts were invited from all parts of Scotland. The sale is to be held at Messrs. Edmiston's Rooms, 7 West Nile Street, and promises to be of much interest, gifts of historic and artistic value having been freely offered. The committee appointed to represent the executive and to carry out the arrangements consists of the following members:—The Duchess of Montrose, Lady Eglinton, Sir George T. Beatson, K.C.B.; Sir John Stirling Maxwell, Bart.; Mr. Hugh Reid, Mr. J. D. Hedderwick, LL.D., Dean of Guild; Lieutenant-Colonel R. D. M'Ewan, Sir W. J. Anderson, C.A.;

treasurer of the Society; with Mr. J. Inglis Ker, 73 Dunlop Street, as organising secretary.

In the beginning of May a motor ambulance, the cost of which had been defrayed by local subscriptions, was exhibited at various points in the parish of Blantyre, and a dedication service, in which all the local ministers took part, was held in the presence of about 2,000 people. The sum collected was £505, 11s. 4d., the cost of the ambulance being £450. The balance of £50 was given to name a bed in the Scottish Women's Hospital at Troyes, in France.

An orchestral concert was given in St. Andrew's Hall on Sunday, 2nd May, Signor G. Enrico Cinganelli conducting, and realised the sum of £172, of which £150 was given to the funds of the Scottish Branch, and £22 to the Lord Provost's Rents Fund.

Early in May, Cromlix Lodge, Dunblane, was opened as a convalescent home for soldiers, having been placed at the disposal of the Red Cross Society by Colonel and Mrs. Hay Drummond.

The work of the Motor Ambulance Unit of the Scottish Red Cross at Rouen for the week ending 2nd May indicated the heavy nature of the fighting which took place at that time. The Scottish ambulances carried during the week 1,186 sitting patients and 1,298 stretcher cases. The car runs numbered 298, and the distance covered was 3,841 miles. The work of the ambulances earned very high praise from the hospital authorities on the spot.

It was learned about this time that the motor ambulance convoy of 55 cars, which the Scottish Branch gave to the War Office in February, had recently been attached to the Highland Division in Flanders, and a letter from Colonel C. C. Fleming, D.S.O., commanding the medical section of the Division, spoke of its work in terms of warm appreciation. The statistics of the transport work done in the Glasgow district also showed continued activity and efficiency.

An appeal for the assistance of children as collectors was made by the executive in the first week of May, and the success which might in this way be attained was indicated by the results of the children's effort in Perthshire, through which the sum of £1,200 was collected for the purchase of two motor ambulances.

In the middle of the month the Headquarters Organising Clothing Committee issued a statement urging all church work parties to continue their efforts throughout the summer, as the heavy demands on the Branch were likely to increase, necessitating continuous effort on the part of all Red Cross workers. Sheets, pillow cases, bath towels, packs of cards, and games of all kinds were specially needed.

At this time the Scottish Estate Factors' Society presented to the Society a well-equipped motor ambulance, which was immediately despatched to France; and the employees of the Glasgow Tramways Department forwarded cheques covering the cost of a bed in the hospital at Rouen, and another in the Scottish Women's Hospital in Serbia. A sale of work in Corswall House, Kilmacolm, realised £91, and a matinée in Hamilton Hippodrome, £108. It was intimated that a highly satisfactory response was being made to the appeal for funds for the Scottish National Red Cross Hospital, the first anonymous gift of £1,000 having been followed by another of £2,500, while smaller subscriptions were rapidly raising the total.

The honorary treasurer of the Scottish Women's Hospital for Foreign Service intimated, among the subscriptions received in May, the following sums:—£730, proceeds from Paisley Flag Day; £479, Coatbridge, drawing-room meeting and sale of work, etc.; £431, Dundee W.S.S. and friends (further contributions); £425, per Mrs. Soddy, Aberdeen (further contribution); £300, Scottish Teachers' Fund, for war relief, Serbia (further contribution); £269, per Dr. Louise M'Ilroy, part for motor kitchen (further contribution); £230, proceeds Flag Day, Kilmarnock; £172, Glasgow W.S.S. and friends (further contributions); £100, proceeds Café Chantant, Perth; £100, Jane Gillespie School, Edinburgh, staff and pupils, to raise two beds; £82, 2s. 6d., Royal Burgh, Banff, to name three beds, Serbia; £50, Glasgow Corporation Tramways Staff, to name a bed "Glasgow Tramway" bed. The total money collected had reached a little over £30,000, but more funds were still urgently needed to carry on the work of the hospital units.

An appeal was issued in Ayrshire for subscriptions to the

Ayrshire block of the new National Red Cross Hospital to be established at Bellahouston. The block is to consist of two wards, and will cost £2,500.

At the end of the month the Clothing Committee announced that the contributions of clothing had of late fallen very low, and that the demands from the many hospitals prepared to receive wounded soldiers had been very heavy. They therefore issued a fresh appeal for Ceylon pyjamas, Oxford shirts, slippers with firm soles, handkerchiefs, bath towels, and face cloths. The response to the previous appeals for cards, games, &c., had been very gratifying, but these, or cheques to purchase them, would still be gratefully received.

A work party formed by the ladies of the Merchants' House, Glasgow, reported that since 10th March the party had raised the sum of £598, 5s. 10d., and had sent 758 articles of clothing to St. Andrew's Halls. It was agreed at a meeting on 26th May to name a small ward in Woodside Hospital, and a cheque for £500 was handed to Sir George Beatson for this object. In acknowledging it Sir George gave an interesting account of the work of hospitals, and urged the necessity for continued energy and effort in the future.

REVIEWS.

A Manual of Gynæcology for Students and Practitioners. By SAMUEL J. CAMERON, M.B. London: Edward Arnold. 1915.

PAST and present members of the Glasgow school have issued books on obstetrics, and now we have the appearance of the first book on gynæcology from the pen of Samuel J. Cameron, the son and assistant of the Regius Professor of Midwifery. There is a tendency for young men to write books before they have had time to gain much experience, but although Dr. Cameron is a young man, he has had an extensive experience in gynæcology, and he is therefore well qualified to deal with the subject.

The book is written from a practical standpoint, and the author has refrained from dealing with the supposed *rôle* of the ductless glands, and the use of guardian ferments in the diagnosis of uterine conditions. We agree with him on these points, as whatever may come of these investigations, at present the different views are too diverse to be of practical use, and their inclusion in a book of this kind would be superfluous.

The arrangement of the book is on the usual lines, beginning with very valuable articles on the structure and development of the genital organs, written by Mr. W. K. Hutton, Lecturer in Anatomy at Queen Margaret College.

Gynæcology is essentially a surgical subject, and naturally it is treated as such, but the non-operative side of the subject is not lost sight of. The descriptions of the various conditions and the operations are generally clear and concise, and the illustrations are so well done, that one can follow the different steps of the operations with great ease.

In the treatment of that most troublesome condition, prolapse of the uterus with cystocele, the author strongly recommends vaginal fixation of the uterus — the interposition operation. He has done about seventy cases, and all have been successful. If the patient has not reached the menopause, he cuts and ties the tubes to prevent conception, as a pregnancy would cause serious risks. The illustrations of the various steps of the operation are all that could be desired. Speaking of sterilising patients, we notice that the author recommends this procedure whenever Cæsarean section is necessary in contracted pelves. We consider that this view is too sweeping.

The author does not consider that the ordinary operation of salpingo-oöphorectomy is "a suitable one when the diseased tube is embedded deep down in the cellular tissue of the broad ligament, or becomes moored to the pelvic floor by the shrinkage of the meso-salpinx or the broad ligament generally, or becomes so intimately and firmly associated with the lower part of the pelvic cavity that the outer extremity of the tube cannot be defined." He prefers to reach the tube by division of the anterior layer of the broad ligament. The tube is then shelled out as it were. The steps of the operation are very minutely described, and the illustrations make them very clear. There is less risk of injuring the bowel, but some of the adhesions will be left behind. The author maintains that this is not of much consequence, as they subsequently disappear. Undoubtedly this often does occur.

In his chapter on preparation and technique we are glad to see that the author prefers a simple routine. He rightly maintains that "thoroughness, not complexity, is the ideal to be aimed at."

The book is extremely well illustrated, with 232 plates made from original drawings by Mr. A. Kirkpatrick Maxwell, and from photographs and photomicrographs by Dr. J. Shaw Dunn and Mr. Fingland. They reflect great credit on all concerned in their production.

We congratulate Dr. Cameron on having produced a book which is a credit to himself and to the school to which he belongs. We strongly recommend it to students and practitioners.

Obiter Scripta: Throat, Nose, and Ear. By A. R. Friel, M.A., M.D. Bristol: John Wright & Sons, Limited. 1914.

A suggestive little book, and will well repay perusal. Chapter I has useful hints on the management of some common conditions met with in throat, nose, and ear work. Chapter II deals with zinc ionisation in the treatment of chronic purulent otitis media, and of uncomplicated simple empyema of the frontal, maxillary, or sphenoidal sinus. The type of chronic middle-ear suppuration suitable for treatment by ionisation is where the perforation is large enough to allow fluid to run into the middle ear, and in which there is no extensive bone disease or mastoid trouble. In the case of the nasal sinuses, empyema of the antrum when there is not concomitant disease of the ethmoid, or polypi, or diseased bone in the walls of the cavity. It might be urged that in such cases any recognised line of treatment would probably give a good result; but the author claims for ionisation that "one application may be quite sufficient to cure completely a case of chronic ear or maxillary-antrum suppuration." Full details are given how to carry out the treatment, which may be combined with vaccines. Chapter III is on the treatment of ozæna. Recently the results got by a vaccine of the Perez bacillus have been very encouraging. The author's method is by intravenous injections of a Friedländer vaccine and ionisation of the ethmoidal cells, combined with cleansing of the nostrils.

One realises that the author has done good work, which is entitled to consideration.

The Road to a Healthy Old Age: Essays Lay and Medical. By T. Bodley Scott, L.R.C.P.E., M.R.C.P. London: H. K. Lewis. 1914.

These essays, in part at least addressed to the layman, contain the fruits of the long experience of a practitioner of wide culture and of unusual powers of observation. It is one of their merits that in the diseased conditions of which he discusses the prevention Mr. Scott recognises the importance of the individual patient, and that he handles his subject less from the point of view of abstract science than from that of the benefit to humanity which is to be obtained from healthy age. This is not to say that the scientific side of his subject is neglected: there is, indeed, much to be learned from his hints upon the care of the arteries and the general management of those difficult elderly patients who are reluctantly becoming old; but it adds to the pleasure and profit with which we read his book that we feel him to regard his patients, his readers, and himself as of the same clay, "of human weakness all compact." He teaches us, and we feel it is by example, both how to prolong our days and how to face death.

Human Physiology. By Professor LUIGI LUCIANI. Translated by FRANCES A. WELBY. In five volumes. Vol. III, edited by GORDON M. HOLMES, M.D. London: Macmillan & Co., Ltd. 1915.

PROFESSOR LUCIANI'S *Human Physiology* is quite unique. It is not a mere text-book suitable for examination purposes—it is a broad exposition of the principles of physiology in which due attention is paid to the historical aspects of the subject.

This, the third volume of the English Translation, maintains the high standard of the volumes already published. The translation has been made from the fourth Italian edition, which has appeared since the publication of the English translation of Vols. I and II. The editorship of this new volume, which deals with the muscular and nervous systems, was undertaken by Dr. Gordon Holmes.

As regards the three chapters devoted to the physiology of muscle, although they treat the subject in the characteristic Luciani fashion, they are a little disappointing and uneven. The discussion of the problem of muscle contraction, for example, is not very fully dealt with in its modern aspects. On the other hand, two phases of the physiology of muscle are considered with a degree of detail which is quite foreign to the average English text-book, viz., the mechanism of the locomotor apparatus, and the, perhaps, unnecessarily full (it runs to no less than 46 pages) discussion of phonation and articulation.

The part devoted to the nervous system is divided into seven chapters, and is excellent. It opens with a good discussion of the general physiology of the nervous system. Special chapters are then devoted to the spinal cord, the sympathetic system, the medulla, the hind, the mid, and the fore brain. Each is dealt with in a very complete and clear manner, giving, on the whole, the best review, fairly stated, of the modern views of this branch of physiology available in English. It is to be regretted, however, that some of the most recent English work is not dealt with in greater detail, and that in the consideration of the brain proper the latest work of Pavlov, who has opened up a new and valuable field by his investigations into the conditional and unconditional reflexes, is completely ignored.

Miss Welby's translation, in spite of the many difficulties which must have confronted her, maintains its excellent character.

Text-book of Public Health. By E. W. Hope, M.D., D.Sc.
Edinburgh: E. & S. Livingstone. 1915.

This is a revised and enlarged edition of the notes on public health formerly appended to Husband's *Forensic Medicine*, and now issued separately under a new editor. It seems to us that the book falls between two stools—it is too condensed and unreadable for the medical student, and yet not sufficiently informative for the public health student.

Without any preliminary remarks, the subject of site and soil is taken up in the first chapter, and the amount of condensation makes it difficult reading. The second chapter deals with foundations and basements in a very brief fashion. Here the statement is made that "in order to exclude the possibility of damp as well as to keep out ground air it is necessary to completely cover the whole of the site with concrete or some material equally close and hard." Yet a little further on, concrete is not mentioned as a possible material for a damp-proof course. The fact is, of course, that concrete can absorb a large amount of water and become quite damp (witness a concrete pavement after rain), and its use in basements is to restrict the burrowing of vermin and also act as a support to a layer of asphalt, which is truly non-porous to damp. The suggestion on p. 8 that such a concrete layer may serve as a floor itself is not a wise one, as it will be kept damp by the subsoil and give the unfortunate occupants of the hall the discomfort and danger of cold feet.

The language is not always what might be desired. On p. 37 it is stated that "a scanty and insufficient water-supply, or the scanty use of available water, means every form of sickness associated with filth, &c."

Under ventilation, emphasis is laid on the physical and mathematical principles, whilst the practical appliances and the propulsion and plenum systems are inadequately described. The definition of a gas as "an aëriform body characterised by a marked tendency to occupy a larger space," does not seem helpful to the student. It is, besides, inaccurate when thus given without qualification. The chapter on zymotic diseases and hospitals is the most readable in the book. A summary of sanitary law forms the last chapter.

The book is well printed and the illustrations are good.

Public Health Laboratory Work. By Henry R. Kenwood.
Sixth Edition. London: H. K. Lewis. 1914.

This is the sixth edition of Professor Kenwood's well-known work, and in it a definite difference from preceding editions has been established by the omission of the bacteriological portion. The work, as formerly, is well illustrated, and the ground is covered at some length. The matter is well displayed, and, as a rule, the usual processes are given and clearly described. There are notable exceptions, however.

In regard to such an important beverage as beer, there is no statement as to how to estimate the alcohol content. Reference has to be made to the beginning of the chapter where, under "Alcoholic beverages," general methods are given to take 300 c.c. and distil over 200 c.c., or to take 300 c.c. and boil down to 100 c.c. This is misleading to the student, who is commonly supplied with a bottle of beer containing about 350 c.c., and has to make several estimations with this amount. The quantities usually taken in these tests are 100 c.c., and they are specially described as the direct and indirect methods of estimation of alcohol content in beer. Again, the method of estimation of formalin given is that by Legler's process (which is inadequately described), and the more commonly known methods by the use of iodine and ammonium chloride are not referred to, though these are still expected at certain examinations. There is also a tendency to discursiveness at parts, which is quite out of place in a laboratory manual and unprofitable to the student. In spite of such blemishes, the book is one in which the public health student will find much that is of value.

Sanatorium Case Register. Designed by G. M. Mayberry, B.A., L.R.C.P. London: H. K. Lewis.

We have received from Messrs. Lewis a specimen sheet showing the arrangement of a case register for sanatorium patients, designed by Mr. G. M. Mayberry. The register sheet measures 23 inches by 11 inches. The left half is arranged for a complete record of the patient, including family history, previous illnesses and treatment, signs and symptoms of present illness, general appearance, temperature, weight, and pulse. The lower portion of this side is occupied with diagrams of the thorax (front and back) for recording physical signs on admission and discharge, diagrams of the larynx, and spaces for records of the urine and sputum, the results of tuberculin tests, and general remarks. The opposite page is provided for notes, and space is also allowed for the after-history. Each sheet is printed on both sides, and when bound in books each opening shows a complete record of the case. The registers are supplied in books of 50, 100, 150, or 200 forms, and should prove very serviceable to sanatorium medical officers.

Essentials of Physiology. By F. A. Bainbridge, M.D., D.Sc., and J. Acworth Menzies, M.D. London: Longmans, Green & Co. 1914.

Messrs. Longmans, Green & Co. have added to their well known trio of physiology "essentials" by Schäfer, Brodie, and Halliburton this small volume. Although it is perhaps possible to condense practical teaching into a small volume, particularly where the whole material has to be amplified by practical tuition, it is much more difficult to condense the theoretical side of physiology in a satisfactory fashion. It is difficult to strike the happy mean—either the material is so scrappy that it is inadequate, or else it is so condensed that it becomes difficult of digestion.

As a condensed summary of physiology, or rather of a large text-book of physiology like that of Starling, the present volume is excellent. But the authors have attempted to get too much material into the pages at their disposal, notwithstanding the fact that they have excluded practically all histological detail and description of chemical and experimental methods. If they had adhered to their professed object in writing the book, namely, to bring together "the fundamental facts and principles of physiology"—and there is distinctly room for such a small book—they would have done the science a good service.

In spite of this defect the book gives an admirable survey of modern physiology, clearly and simply written, and well illustrated. It is also provided with a good and full index.

A Text-Book of Insanity and Other Mental Diseases. By C. A. Mercier, M.D., F.R.C.P. Second Edition. London: G. Allen & Unwin, Limited.

After an interval of twelve years, Dr. Mercier has given us a second edition of his *Text-Book of Insanity.* The first edition had a ready reception, and was well-suited for the use of the medical student commencing the study of insanity. Of the second edition, which has been entirely rewritten and enlarged, the same cannot be said. Many of the views expounded by Dr. Mercier have not met with the acceptance of his colleagues. In his preface, Dr. Mercier hopes that the book will "give the novice a general idea of the elements of the subject, but if he is reading merely for the purpose of preparing for a qualifying examination, there is much that he will be well advised to omit. It is never advantageous for an examinee to know more than his examiners about his subject." Possibly not; but surely it will be to his advantage if he is conversant with current ideas and with what is accepted by the majority of workers on the subject as most assured. It is here that fault is to be found with this *Text-Book*. Mercier's doctrines are novel and expounded in a forcible manner. Their novelty causes attraction but fails to bring conviction.

Part I of the *Text-Book* comprises 112 pages. One chapter is devoted to the causes of insanity, another to the consideration of conduct and its disorders, and a third to the study of mind, its constitution and disorders. For more than twelve years Mercier has preached the doctrine that insanity is disorder primarily of conduct and not of mind. Disorder of mind that has no influence upon conduct cannot, according to Mercier, be regarded as an indication of insanity. The preacher himself is obliged to admit that his doctrine has made little or no progress towards acceptance. This, however, is not due to any inclination on the part of modern psychiatrists to underestimate the significance of conduct in relation to mind; rather is it due to an initial difference of opinion as to the relation of disordered mind to disordered conduct, more especially as regards the question of priority. If Dr. Mercier chooses to attach to the term insanity a significance different from that assigned to it by consensus of opinion, he need not be surprised if he finds few adherents.

In the chapter devoted to the study of mind, Mercier gives us a psychology that is peculiarly his own. He urges rightly that every alienist should prepare himself for the study of insanity by acquiring a competent knowledge of psychology. Then he goes on to say: "The study of normal psychology, as taught in authoritative text-books, has proved of very little use, I may say of no use at all, in assisting us to comprehend insanity. . . Nor do I find that a knowledge of psychology as taught in any book on the subject has been of the slightest use to myself or to anyone else, either in the investigation of any individual case of insanity or in the systematic study of insanity at large." Nevertheless, the psychology expounded in Mercier's *Text-Book* is not good, despite the author's dogmatism and egotism. To one acqainted with modern psychology, it is interesting because of its novelty; but it is no more, if not less, informative than the psychology which is taught in the ordinary text-books about which he complains.

Part II of the book (pp. 115-311) deals with the various forms, types, and kinds of insanity. It is open to doubt whether the classification here adopted by Mercier represents any real advance, and whether it may not tend to confuse the student. The clinical descriptions are nevertheless good and true, and the treatment advocated is of the best.

Part III (pp. 317-340) deals with the legal relations of insanity.

Elements of Pharmacy, Materia Medica, and Therapeutics. By Sir WILLIAM WHITLA, M.A., M.D., LL.D. Tenth Edition. London: Baillière, Tindall & Cox. 1915.

THIS well-known book has been brought up to date, and, as formerly, deals with the subject practically in two divisions. The first three parts deal with pharmacy, the administration of medicine, and materia medica proper. Then in part four, which may be described as the second division of the book, the author deals with the pharmacology and therapeutics of every official drug. Then follows a *résumé* of the more important non-official remedies. The book continues to be a safe and sound handbook on the subject, and will appeal especially to the student of medicine preparing for examination.

Synopsis of the British Pharmacopœia, 1914. By H. WIPPELL GADD, F.C.S. Eighth Edition. London: Baillière, Tindall & Cox. 1915.

WE welcome the new edition of this eminently practical and useful little book. It will be useful alike to the medical practitioner, the student of medicine, and the pharmacist. The *Synopsis* is well done. Names are arranged alphabetically as in the *B.P.* Characters, doses, and remarks are given opposite each drug. Tests follow, and then there is a synopsis of the poison laws, weights and measures, and alcohol tables; and other tables are given at the beginning of the book. A shilling invested in it would be very well spent.

The Extra Pharmacopœia of Martindale and Westcott. Sixteenth Edition. In Two Volumes. London: H. K. Lewis. 1915.

It is hardly necessary to say very much in favour of this exceedingly well-known book of reference. It is being constantly kept up to date, and in this edition the changes due to the new *B.P.* are incorporated. It almost forms a standard—indeed, the Commissioners of Customs and Excise do regard it somewhat in that light, in that its formulæ are regarded as "known, admitted, and approved of" for the purposes of the medicine stamp duty.

As before, Volume I deals with drugs—their characters, their multitudinous preparations, doses, ordinary admitted and alleged actions; and copious references are given to articles in the medical papers. A first-rate index and posological table is appended.

Volume II deals more particularly with analytical matters, standardisation, approximate composition of proprietary medicines, mineral waters, organotherapy, health resorts, bacteriological notes, &c., and is of importance mainly to specialists.

It is, of course, one of the best known books of the kind in the market, and no doubt will continue to be popular both with practitioners of medicine and with chemists and druggists.

Squire's Pocket Companion to the British Pharmacopœia. By Peter Wyatt Squire. Second Edition. London: J. & A. Churchill. 1915.

The first edition of the *Pocket Companion* was published in 1904, and may be regarded as a condensation of the older and larger form of the book. As before, the arrangement of the drugs is alphabetical, and the monographs on each deal with its description, production, solubility, medicinal properties, dose, prescribing notes, official and non-official preparations, incompatibles, and antidotes.

The prescribing notes are the most important feature of the *Companion*, and have evidently been considerably revised. There is a special chapter on therapeutic agents of microbial origin by Dr. R. Tanner Hewlett, which is a model of succinct description. A list of spas, a classified list of mineral waters, and a therapeutic classification of remedies employed in general and specific ailments follows. There is a good index, which, however, is hardly a necessity, owing to the alphabetical arrangements of the drugs in the body of the work.

The book is beautifully printed, and its general get-up is excellent. We can thoroughly recommend this edition.

A System of Clinical Medicine for Students and Practitioners. By Thomas Dixon Savill, M.D. Fourth Edition. London: Edward Arnold. 1914.

The fourth edition of the late Dr. Savill's *System of Clinical Medicine* has been called for only two years after the publication of the third, a circumstance which speaks very eloquently of the special place which it fills in medical literature. Its special feature is that it approaches the subject of medicine from the point of view of symptomatology, and works from the symptoms to their causes in the various diseases which may be in operation. The book is already so well known and so widely appreciated that it is unnecessary to say more of it than that the present edition, as heretofore edited by Dr. Agnes Savill, has undergone thorough revision, and will be found in every respect up to date. The most notable change is in the chapter on diseases of the heart, which has been recast by Dr. C. E. Zundel, while Dr. Leonard Williams has revised the sections on obesity and diseases of the thyroid; Dr. F. Foord Caiger the two sections of the chapter on fevers; Dr. J. Campbell the section on bacteriology; and Dr. R. H. Cole that on mental diseases. The book is warmly to be commended to all those who do not already know it.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

MEDICINE.

The Tobacco Heart. By Harlow Brooks, M.D. (*New York Medical Journal*, 24th April, 1915).—Dr. Brooks summarises his conclusions as follows:—Tobacco produces symptoms referable to the heart of a very definite and characteristic type. These are first manifested by an increase in rate, with a rise of blood-pressure; later, by a slowing, with a fall in pressure. These symptoms are apparently due to vagus effects, and quickly disappear when the drug action passes. These symptoms all diminish in degree with habituation to the drug, though probably they may be aroused in almost any instance by increasing the dose, and in many cases by changing the form of administration.

Prolonged excessive administration of tobacco induces arrhythmia and intermission. These symptoms are more or less persistently accompanied by a sense of weight, or of pain of a dull persistent character, in the heart region. Pain may be entirely independent of alterations in rhythm, though most likely to occur with a slowing of the usual rate. So far as can be surmised from experimental evidence and from clinical observation, these symptoms are not due to vagus disturbance, but to claudication of the coronary vessels. They are more likely to appear in chronic smokers than in beginners, and in long-standing rather than in recent tobacco habituation.

Tobacco angina pectoris is in all symptomatic respects similar to the true angina pectoris caused by coronary disease. It occurs with considerable frequency in chronic tobacco poisoning. It is unusual, if not unknown, in acute tobacco poisoning, and long habituation to the drug predisposes to this symptom. It is relieved by the usual vaso-dilators, and also by morphine. It is commonly succeeded or preceded by a sense of pain in the precordium. The angina of tobacco poisoning is entirely relieved, and commonly does not recur, if tobacco is given up. In many instances one attack appears to sensitise to others. This sensitisation seems to disappear very slowly. So far as can be determined, this symptom is due to a coronary claudication, and it is entirely, or almost, free from vagus effect.

There is no clinical nor experimental evidence that disease of the heart muscle is caused by tobacco, save for possible changes in the papillary muscles, probably explainable on a mechanical basis. The fact that all symptoms disappear when tobacco is discontinued seems to confirm this statement.

There is neither clinical nor anatomical evidence sufficient to indicate that true coronary sclerosis may be caused by tobacco, though it is highly probable that when this condition exists the symptoms are accentuated by it.

Tobacco angina is promptly relieved by discontinuation of tobacco; no such result can be obtained in true angina pectoris.

It is probably unwise to permit the use of tobacco in circulatory diseases when symptoms of cardiac embarrassment occur.

The persistent use of tobacco immunises against vagus effects, and sensitises to coronary claudication.

Death may result from acute tobacco poisoning, in which case its mechanism is chiefly from vagus effects.

Death may result from tobacco angina, but it is probably very rare, and most likely occurs only when anatomically diseased coronary vessels pre-exist.

The essential treatment of tobacco poisoning is suspension of the use of tobacco.—ADAM PATRICK.

Shick Reaction, with a Report of Eight Hundred Tests. By Herman N. Bundesen, M.D. (*Journal of the American Medical Association*, 10th April, 1915).—A practical method for determining whether or not a person is susceptible to diphtheria was devised in 1913 by Shick while working in von Pirquet's clinique. The reaction depends on the local irritant action of minute quantities of diphtheria toxin when injected intracutaneously in the absence of antitoxin. A dilution of a fresh standard diphtheria toxin is made of such a strength that 0·1 c.c. contains $\frac{1}{50}$ of the minimum lethal dose for a 250-gramme guinea-pig, and this is injected into the skin of the fore-arm. If antitoxin is absent, or present only in very small amounts, insufficient for protection, a positive reaction appears at the end of twenty-four hours. This is characterised by a constantly increasing circumscribed area of redness and induration of from 10 to 25 mm. in diameter, which reaches its maximum in forty-eight hours. It persists for about a week, and on fading shows a brownish pigmentation, with superficial scaling and a characteristic central infiltration. Positive reactions indicate that there is less than $\frac{1}{30}$ of a unit of antitoxin in 1 c.c. of blood serum. Such persons are susceptible to diphtheria.

In 800 diphtheria contacts the writer found that 60 per cent were possessors of antibodies in sufficient numbers to make a prophylactic dose of antitoxin superfluous. No case of diphtheria developed in those showing a negative Shick reaction, and he felt perfectly safe in leaving a case showing a negative result without prophylactic inoculation, no matter how intimately exposed. Of 44 carrier cases 70 per cent were negative, and 30 per cent showed a very faint reaction. Not one frankly positive occurred among the 44 cases. Bacillus carriers invariably have a high antitoxin proportion, and depend on this factor for immunity. The writer found that children of the same family always gave a similar reaction, either all negative or all positive.—ADAM PATRICK.

SURGERY.

A Review of 114 Consecutive Operations for Acute Appendicitis without Mortality. By Thew Wright (*American Journal of Surgery*, April, 1915).—The cases in this series were all acute; interval or chronic cases should have no mortality and were not included. The author was impressed by the frequent appearance of the appendix in positions other than are described in text-books. Fifty-seven in the list were of the catarrhal type, 48 suppurative, and 9 gangrenous. Leucocyte counts were of no value in determining the nature of an attack. The author used the right rectus incision in most of the cases, as with it a large exposure is obtained. Where the appendix was gangrenous or had perforated, drainage was established; but the mere presence of fluid, no matter how turbid, did not call for this procedure. Post-operative treatment consisted of Fowler's position in drainage cases, and continuous proctoclysis with sterile tap-water in all; 10 to 15 minims of tincture of opium was added to the water every two or four hours. Hypodermic injections of morphia were administered if painful peritonitis was present. To prevent peristalsis when peritoneal irritation was present, nothing was given by the mouth until all signs had disappeared.—CHARLES BENNETT.

The Removal of Needle Fragments from the Skeletal Muscles. By W. M. B. (*American Journal of Surgery*, May, 1915).—In an editorial this author suggests the following as good rules to observe in removing needle fragments:—

1. Systematic localisation by careful fluoroscopic examination; probably stereoscopic x-ray photographs are best. Bismuth powder dusted in the skin folds will help in finding the distance from the surface.

2. Careful dissection with ungloved hands in a bloodless and anæsthetised field. Incisions are to be made across the axis of the needle only when that object is known to be near the surface. When the needle is deeply placed, incisions should be in the line of underlying muscle fibres. Fascia is to be cleanly incised, and the bare finger-tip employed for exploration. Sponging is unnecessary if the tourniquet is well applied.—CHARLES BENNETT.

Chronic Tetanus with Relapse. By R. Auboyer (*Paris Médical*, 10th April, 1915).—Cases of chronic tetanus are rare, and this one seems to the author to be particularly interesting by reason of the long duration of the infection and the persistence of the bacillus of Nicolaier in a healed wound, from which the missile had not been extracted.

A young soldier was wounded, on 23rd September, by a fragment of shell in the left arm. He was admitted to the Orleans Hospital thirty-six hours later. No antitetanic serum had been administered. The wound, about the size of a 50 centime piece, was situated in the left deltoid region, at the junction of the middle and upper thirds of the arm. There was a sinus where the missile had travelled round the humerus, but no wound of exit. The condition appearing slight, the surgeon contented himself with cleaning and dressing the wound without giving serum. Radioscopy showed the piece of shell to be lodged deeply in the posterior thoracic wall. Its situation, and the patient's good general condition, induced the surgeon to leave the fragment *in situ*. Thirteen days after the wound had been inflicted a slight trismus developed, but there was no rise of temperature. Ten c.c. of antitetanic serum was injected, and the patient transferred to the care of the author. The trismus rapidly became more marked, and contractures developed on the trunk and left upper limb ; the arm was abducted, and the fore-arm strongly flexed. The temperature remained normal, and the urine showed no albumen. For fifteen days the patient received a daily intramuscular injection of 2 c.c. of 10 per cent phenol-glycerine, and on one occasion an intra-arachnoid injection of magnesium sulphate.

The condition subsided slowly, and the patient made a gradual partial recovery. He was dismissed on 15th November, still showing limitation of movement at the left shoulder and some fixation of the jaw muscles. One month later he was admitted with all his symptoms more decided than before. This time the piece of shell, accompanied by a fragment of tunic, was removed by a laborious operation.

The cloth was introduced directly into a culture medium, under anaërobic conditions, and a growth of tetanus bacilli was obtained. The patient recovered slowly.—CHARLES BENNETT.

Books, Pamphlets, &c., Received.

The Commoner Diseases: Their Causes and Effects, by Dr. Leonhard Jones. Authorised English Translation by William H. Woglom, M.D. With 250 figures in the text. London : J. B. Lippincott Co. (16s. net.)

Scheme for Dealing with Tuberculous Persons in the County of London, by D. Barty King, M.A., M.D. Edin., M.R.C.P. Lond. & Edin. With a Foreword by Professor Sir William Osler, Bart., M.D., F.R.C.P., F.R.S. London : John Bale, Sons & Danielsson, Limited. 1915. (5s. net.)

Encyclopædia Medica. Second edition. Under the General Editorship of J. W. Ballantyne, M.D., C.M., F.R.C.P.E. Volume I, Abattoirs to Asphyxia. Edinburgh and London : William Green & Son. 1915. (20s. net.)

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GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDED 19TH JUNE, 1915.

	WEEK ENDING			
	May 29.	June 5.	June 12.	June 19.
Mean temperature, . .	55·1°	53·6°	59·2°	57·3°
Mean range of temperature between highest and lowest,	21·8°	13·9°	19·3°	21·5°
Number of days on which rain fell, ...	2	3	3	0
Amount of rainfall, . ins.	0·67	0·56	0·07	0·00
Deaths (corrected), . .	408	435	396	351
Death-rates, ...	19·7	21·0	19·1	17·0
Zymotic death-rates, . .	4·1	4·7	4·2	3·5
Pulmonary death-rates, .	5·0	5·2	4·0	3·5
DEATHS—				
Under 1 year, . . .	74	83	82	62
60 years and upwards, .	102	95	78	77
DEATHS FROM—				
Small-pox, ...	...	...	...	...
Measles, ...	53	70	52	59
Scarlet fever, . . .	3	3	6	2
Diphtheria, . . .	5	1	4	3
Whooping-cough, . .	25	20	23	8
Enteric fever, . . .	...	...	...	...
Cerebro-spinal fever, . .	...	5	3	2
Diarrhœa (under 2 years of age),	3	4	5	6
Bronchitis, pneumonia, and pleurisy, . . .	76	85	63	49
CASES REPORTED—				
Small-pox, ...	...	...	...	...
Cerebro-spinal meningitis, .	5	7	7	6
Diphtheria and membranous croup, ...	18	32	21	21
Erysipelas, . . .	24	32	31	32
Scarlet fever, . . .	111	124	112	108
Typhus fever, . . .	...	...	...	...
Enteric fever, . . .	5	2	6	10
Phthisis, ...	64	47	57	66
Puerperal fever, . .	4	...	3	8
Measles,* . . .	1012	901	975	722

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, 28*th June*, 1915.

THE

GLASGOW MEDICAL JOURNAL.

No. II. August, 1915.

ORIGINAL ARTICLES.

HÆMATURIA, A SYMPTOM: ITS CAUSES AND DIAGNOSIS, WITH A FEW CASES ILLUSTRATING SOME OF THE LESS COMMON LESIONS.

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The main object of this article is to call attention to difficulties met with over an extended experience in urological work, *vexata questio*, not sufficiently known and recognised in daily practice, and therefore very liable to lead to serious errors in diagnosis and treatment.

In reviewing the subject, attention will be directed in the first place to hæmorrhage of renal origin, dividing it into two categories, according as the bleeding is not, or is, associated with other evidence of disease. Bladder lesions causing hæmaturia will next be considered, then the methods employed in making a diagnosis will be described, and, finally, the diagnosis of individual diseases discussed.

The appearance of blood in the urine is a symptom of a very large number of lesions as seen in surgical practice, and may have its origin in any division of the urinary tract. At the outset we desire to emphasise an important point: hæmaturia is a symptom only. The aim of the medical adviser is not simply to stop the hæmaturia, as he would an epistaxis from injury, but to ascertain the cause. Bleeding does not take place from a healthy urinary tract. When blood appears in the urine, however small the quantity, it indicates some departure from the normal. What that departure is should be demonstrated as early as possible. The operative statistics of the urologist have greatly improved during recent years, and this is clearly the result of two circumstances: the general practitioner is now more clearly grasping the significance of hæmaturia, and recognises the importance of early detection of the lesion causing the bleeding, and, when used by a skilled observer, the methods of enquiry employed are now so numerous and perfected that the surgeon can make an exact diagnosis at a very early stage in the disease, certainly in most instances before a gross lesion has become established. It is self-evident that the earlier the cause of the hæmaturia is attacked the more assured will be the success of the surgeon.

In the first instance, *renal hæmaturia* will be considered; afterwards bleeding from other causes.

In the great majority of hæmaturias of a purely surgical nature, the urine indicates in some way the portion of the urinary tract involved by disease. A differential diagnosis of the source of the hæmorrhage may be made—

1. By observing (*a*) the physical characters of the urine and of the blood-clot, (*b*) the admixture of other deposits with the blood, (*c*) the time at which the blood appears in the stream, (*d*) the frequency and duration of the attacks, and (*e*) the effects of movements and exercise, or of complete rest, in the course of an attack.

2. By collecting the urine separately from the two ureters, or by observing blood escaping from the orifice of a ureter.

3. By estimating the quantity of hæmoglobin, and comparing it with the amount of albumen in the urine.

4. By carefully considering all the other accompanying objective and subjective phenomena.

In the great majority of cases met with in practice the bleeding is accompanied by other symptoms or physical signs, but in not a few instances the appearance of blood may be the only indication of disease. These hæmaturias have been falsely called "functional" or "essential," because the observer has been unable to discover an adequate cause for the bleeding; but with more exact methods of enquiry the number of these has been greatly reduced.

On reviewing a large number of cases of renal hæmaturia which have come under observation during the last fifteen years, a goodly proportion have been found to present no symptom beyond the appearance of blood in the urine. A few of these have consequently offered serious difficulties in diagnosis, and have required an exploratory operation to find a satisfactory explanation of the bleeding and a remedy for the disease.

Cases of renal hæmaturia—which are symptomless for a long time, for months or even for years—are very liable to be allowed to drift. The patient is alarmed at the appearance of blood; he consults his medical adviser, who prescribes treatment; the bleeding stops and he is satisfied, and is led astray by the hope that all is well. The sign has disappeared, but the disease still remains. The bleeding recurs, say, in three months, continues for a day or two, and again disappears. These bleedings are small, but are not therefore without significance; often it is the little bleedings that are indicative of serious although not advanced disease. If a large bleeding occurs, both the patient and his medical adviser seek for an exhaustive examination of the urinary organs; but by that time probably the disease is well established, and the most favourable time for surgical intervention has passed.

Let us in the first instance consider the *lesions in which bleeding may be the only sign.*

The most important fact to know is that there are many renal lesions which may give rise to a symptomless hæmaturia. Amongst these may be mentioned (*a*) passive hyperæmia from pressure on, or torsion of, the renal vein; (*b*) renal varix; (*c*) tumours in the pelvis of the kidney; (*d*) early tuberculosis; (*e*) renal calculus; and (*f*) aneurysm occupying the pelvis of the kidney.

(*a*) *Passive hyperæmia of the kidney.*—Passive hyperæmia as a cause of symptomless hæmaturia was brought before the profession by the writer in an article in the first issue of *The British Journal of Surgery.*[1] But as long ago as 1896 he called attention to the relationship of renal pain, hæmaturia, and albuminuria to increased vascular tension in cases of movable kidney, and he recorded cases showing that the symptom might be relieved by surgical treatment.[2] Since then a large number of cases of hæmaturia have been seen by the writer where the bleeding has been the result of displacement or mobility of the kidney, and the condition rectified by section, decapsulation, or by fixing of the kidney. In the great majority of these cases the bleeding has been associated with pain, but in a few the hæmorrhage was the only symptom. Doubtless if the pelvis had been opened in all these cases, in many of them renal varix would have been discovered. It must be remembered that symptomless hæmaturia is the exception in renal lesions; nearly always some other indication of disease shows itself.

It is in displacements, fixed or movable, that symptomless hæmaturia is met with. In writing on the subject of increased vascular tension of the kidney some years ago, the following remarks were made:—

"Interference with the venous return is a condition with which we are very familiar, and in movable kidney is probably the most frequent cause of pain associated with hæmaturia. This correlation has been observed in over 12 per cent of my cases, and in 7 per cent the hæmaturia has been noted as severe.

"The pathology of these cases is easily understood. It is manifest that in such displacements of the kidney we have to deal with a passive hyperæmia of the organ due to local causes. In some instances the obstruction may be entirely venous; in others the arterial circulation may also be interfered with. It has been proved by experiments upon animals that when the venous flow is impeded the quantity of blood flowing through the kidney is diminished, and, as a consequence, the amount of urine excreted immediately decreases. Co-incident with the diminution in quantity of the excretion there is a concentration of the urine, which soon becomes albuminous; and, should the hyperæmia be intense, blood corpuscles, tube-casts, and even blood-casts may appear in the urine."[3]

The circumstance that nothing can be discovered on making a section of the kidney while it is still alive, or after it has been excised, does not prove that the organ is free from disease; vascular changes, involving increased arterial tension, or obstruction to the venous return, may leave very little evidence, the dividing of the capsule, and the section of the parenchyma, at once relieving the hyperæmia.

(*b*) *Renal varix* is a condition which must be taken into account as a cause of renal hæmaturia, and is the lesion to blame for the bleeding more frequently than has been generally supposed. The varix usually occupies the apex of one or two papillæ, and the distended venous radicles may extend into the medulla, imparting a dark-red colour to it, and numerous submucous hæmorrhages may be seen.

A sufficient number of cases have now been recorded to lead us to recognise renal varix as a distinct pathological entity, and probably in many cases of displaced or movable kidney the hæmaturia has been due to varicosities of the venous radicles in the medulla or pelvis of the kidney, although the condition has not been recognised at the time.

The history of renal varix is generally as follows:—While in the enjoyment of ordinary health the patient discovers blood in the urine; at first the amount is small, and the bleeding lasts for a few days or a few hours, but within a short time the urine becomes loaded with blood, which is uniformly mixed in the urine. Rest or exercise does not influence the amount of blood; clots of blood or blood-moulds of the ureters may be found, and by the cystoscope be seen protruding from the orifice of the ureter.

Blood-shoots escape from one ureter only. The bleeding may last for days, may disappear and recur at short intervals, or may be continuous. It may be present at all times, or may disappear entirely with rest in bed, to reappear as soon as the patient gets up.

The quantity of albumin corresponds to the amount of blood, there is no deposit in the urine except blood and blood-casts, there are no tube-casts, no infective organisms, no crystals, no shadow is found with *x*-ray photography, and there is no tenderness on pressure over the kidneys.

On cystoscopic examination the mucous membrane of the bladder may be blood-stained, and clots may be adherent to its walls; but when these are removed the mucous membrane is seen to be normal, and, if the hæmaturia is active, shoots of bright-red blood are seen escaping from the ureter of the affected kidney. There is no change in the appearance of the ureteric orifices. The shoots are frequently large, and are ejected with some force. On the other hand, the shoots from the neighbouring kidney are few, small, and generally feeble. Fenwick[4] has reported four cases, Whitney[5] one, MacGowan[6] three, Pilcher[7] four, and the writer has recorded three cases of renal varix all associated with painless hæmaturia.[8] In the following case there was, however, some pain, although at first the hæmaturia was symptomless. Probably the pain was caused either by some displacement of the kidney, or by blocking of the ureters with blood-clot.

CASE I.—*Renal varix—Hæmaturia—Kidney enlarged and movable—No x-ray shadow—Shoots of blood from left ureter—Nephrorrhaphy without improvement—Resection—Cure.*

The patient was admitted to the Glasgow Royal Infirmary on 13th October, 1913, complaining of hæmaturia of three weeks' duration. The hæmaturia began while the patient was at work. It began painlessly, and continued so, except upon two occasions when he felt considerable discomfort in the left kidney and passing across to the right lumbar region. The first attack of this pain was two weeks after the onset of the hæmaturia, and the second attack one week later. When lying in bed the patient's abdominal muscles appeared rigid, so that palpation failed to reveal any enlargement of the kidneys, and an *x*-ray plate did not give a shadow either over the renal region or the bladder. The urine was dark-red, and blood was intimately mixed with it. Reaction acid, and specific gravity 1018. No pus, and no organisms present.

13th October, 1913.—Cystoscopic examination shows the line of the left ureter to be marked by a very distinct ridge, and about the centre of this ridge the mouth of the ureter appears as a wide oval opening with pouting lips. While watching for a few seconds, a large shoot of almost pure blood was thrown from the ureter into the bladder. This was repeated time after time. The orifice of the right ureter is normal. Under the anæsthetic the left kidney is easily palpable, and found to be slightly enlarged and unduly mobile.

27th October.—Lumbar exploration was performed, and the left kidney found to be very dark-red in colour from congestion. There was very little enlargement, but the range of movement was greater than normal, and it was thought that the hæmaturia was the result of obstruction of the renal vessels, caused by the displaced kidney. Nephrorrhaphy was therefore performed, the kidney being fixed by sutures at the lower pole, and the wound was packed with gauze.

28th October.—Hæmaturia still continues as before; no diminution in the amount.

2nd November.—Hæmaturia being undiminished, the nephrorrhapy wound was opened up and the kidney exposed in the loin. On account of the traction on the vessels, the artery probably being twisted while the vein was free, the parenchyma of the kidney was very anæmic, so that when an incision was made from pole to pole to expose the whole cavity of the pelvis, very little bleeding occurred. The kidney was enlarged, but at the lower pole two pyramids (the second and third from the lower pole) were found to be of a dark purple-red colour, and this colouration extended from the apex of the pyramid to within a quarter of an inch of the capsule.

The mucous membrane at this point was very deeply congested, and while the epithelium appeared to be intact, it was studded over by innumerable "granulations," giving the surface the appearance of a raspberry, except that the individual "seeds" were extremely small, none being larger than half the size of a mustard seed. The kidney measured 5¾ inches from pole to pole. Of that, 1¾ inch was removed from the lower pole, including the varix, the diseased mucous membrane, and a large adventitious artery which supplied the lower portion of the kidney. The cut surfaces of the kidney were united by mattress sutures, three being introduced to keep the longitudinal section together, and the edges were united by a continuous suture. The lower incision, namely, that by which the varix was removed, was sutured both by mattress sutures and continuous superficial sutures. All the sutures were loosely tied so as not to exert undue pressure on the renal substance, and so avoid cutting. The muscular edges of the parietes were brought together by a row of interrupted sutures, and the skin united by continuous sutures.

4th November (evening).—Since last operation the quantity of blood present has been increased, but later, to-day, it suddenly diminished, and now is very small in amount.

Three days after the operation blood disappeared from the urine, and the patient was dismissed on 21st November, 1913, and has remained well.

(*c*) *Tumours in pelvis of the kidney.*—Tumours in the pelvis are rare when compared with growths involving the parenchyma; but angioma, papilloma, papillary epithelioma, and epithelioma have been found. Only the two first mentioned are likely to cause symptomless hæmaturia; epithelioma is very rare, and papillary epithelioma grows rapidly and bleeds freely, consequently well-marked symptoms develop early in the course of the disease, which clearly point to the kidney as the source of the bleeding. They, therefore, will not be considered at present, but will be referred to later on.

In angioma and in small papilloma in the pelvis no other symptoms beyond the bleeding may be present during many months—indeed, the absence of symptoms and of physical signs is characteristic. Bleedings may be met with for a long period before other symptoms appear. The common belief that a tumour is necessarily associated with pain has, unfortunately, got hold of the professional mind as well as that of the public, and the absence of pain is therefore regarded as a good omen; but the absence of pain, from a diagnostic point of view, is clearly a misfortune. The more easily appreciated danger signal of disease is wanting. In the early stage pain is absent, and not infrequently the whole course of the disease is practically painless.

The structure of the tumour varies. The growth may simply form a flat and highly vascular villous patch on the mucous membrane of the pelvis, which increases slowly in size, and bleeds only occasionally. The case, clinically, presents a long drawn-out life history; or, on the other hand, the tumour may form isolated tufts, each villus being composed of a central vessel, around which the epithelial cells are placed several rows deep, arranged upon a well-defined basement membrane. At a later stage it shows a tendency to extend into the deeper structures. The epithelial cells infiltrate these deeper structures, insulating themselves under the basement membrane, and at the same time depart from their normal form and arrangement; and the young cells readily pass into the renal substance, leading to metastasis or to superficial extinction. By this process the calyces may become one by one filled up by the growth, or it may extend downwards to the exit of the pelvis. When this happens, obstruction to the escape of urine may result from plugging. Then arise other symptoms than bleeding.

Case II.—*Symptomless hæmaturia during fifteen months, very small at first, afterwards large in amount—No symptoms pointing to origin of bleeding except cystoscopic appearances—Blood from right kidney increased on handling organ—Papilloma in pelvis—Resection of papilla and tumour—Good result.*

R. W., aged 49 years, was admitted to the Woodside Home on 16th May, 1908, and gave a history of repeated attacks of hæmaturia, which he said came on without any apparent cause. The bleedings began fifteen months before admission, and during the first twelve months were so small in amount and of such short duration that little significance was attached to them.

Three months ago a considerable hæmaturia occurred, lasting for several hours, and again, at the beginning of May, a hæmorrhage, which lasted over twenty-four hours.

The patient was a healthy, well-nourished man, and, with the exception of the bleeding, enjoyed perfect health. No pain in the bladder or in the renal region at any time, and no symptoms pointing to the cause of the hæmaturia; no shadow with x-rays, and no deposit in urine, except blood corpuscles and mucus; bacteriological examination negative.

The cystoscope showed the mucous membrane of the bladder to be normal. The orifice of the right ureter was enlarged and the lips thickened, while the floor was unusually red, and the shoots of urine from it were slightly blood tinged. On manipulation of the right kidney during cystoscopic examination, the shoots were seen to become more deeply coloured and more frequent. The shoots from the left ureter were clear, and equal in number to those on the right side. No enlargement or displacement could be discovered.

27th May.—The right kidney was explored, and a small soft papilloma was found in the pelvis and fixed to the first and the second uppermost papilli. The growth, which was almost the size of a raspberry, was removed along with the papilla, to which it was attached, with sharp cutting cup forceps. The pelvis was packed with iodoform gauze, and the wounds in the kidney and in the parietes were sutured. The patient made a good recovery, and there was no recurrence of the bleeding as far as known (June, 1910).

Microscopic examination of a portion of the tumour presented the following appearances:—

Closely packed villous processes formed by delicate vascular cones covered by epithelium. The thickness and character of the epithelium varied greatly at different parts—in some, a double layer of normal cells only could be seen above a clear and well-defined basement membrane; in others, there was a thick covering of very soft transitional epithelium, supported upon a somewhat irregular and ill-defined basis. In this characteristic the tumour suggests a tendency to malignancy, so often seen in papilloma of the bladder.

As in the posterior nares, the larynx, the rectum, and the bladder, papillomata in the renal pelvis are usually malign clinically, although histologically they present all the appearance of benign new formations.

Papillary epitheliomata are a later stage of the condition just described, where the growth has extended by metastasis or by continuity. The characteristic peculiarity is that in the kidney, as in the bladder, one portion of the tumour may appear histologically to be benign, while another part presents all the features of a malignant tumour. Hence has arisen the idea of so-called malignant transformation. In the pelvis of the kidney, growths of this kind are so rare that the opportunity of studying their history is small; but the strong presumption is that they are similar to those met with in the bladder, where neoplasms, benign in their early life, become malignant at a later period.

(*d*) *Aneurysm of the renal artery* occupying the pelvis and rupturing into it is also a rare lesion, although the writer has happened to have seen three instances of it—two during life (the patients being saved by a prompt nephrectomy) and one in the *post-mortem* room. In all, the onset of the disease was characterised in the early stage by bleeding only, no other symptom showing itself until clots of blood blocked the ureter or formed in the bladder.*

It is a matter of interest that in one case small bleedings occurred frequently at short intervals and culminated in a very profuse hæmorrhage, demanding immediate nephrectomy; while, in the other patient, an interval of three months elapsed between the early small bleedings and the final severe one, which called for an excision of the kidney. The characteristic feature of the cystoscopic appearances is that when interrupted pressure is made upon the affected kidney by palpation, while pressure is exerted a dark stream of blood is seen flowing from the corresponding ureter, and when the pressure is withdrawn the flow ceases. This feature is not found in any other renal lesion, and it will be again referred to when we consider the question of diagnosis.

CASE III.—*Aneurysm of renal artery occupying the renal pelvis—Hæmaturia at first slight, afterwards very severe—No pain—Plugging of left ureter with clot—Severe hæmorrhage—Lumbar nephrectomy—Cure.*

A. M., aged 52 years, was admitted to the Glasgow Royal Infirmary on 7th January, 1914. When first seen on 31st July, 1913, he complained of hæmaturia of four days' duration. He had frequency of micturition for some years previously, but no difficulty or pain in passing urine. Four days ago the urine became very red in colour, and he passed clots of blood at every act. He had pain only at times, caused by obstruction, but this soon passed off when the clot of blood had escaped. At all other times he had no pain. His frequency became more and more marked, and he passed a very little urine at a time. He had no difficulty and no pain except when a clot passed into the urethra, but there has been some discomfort in the lumbar region. The patient was admitted for a few days in October, 1913, but beyond a slight hyperæmia of the floor of the bladder the cystoscope failed to discover anything abnormal. There was some enlargement of the prostate, but no hæmaturia was noticed while the cystoscopic examination was being made.

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* The question of symptomless hæmaturia is discussed by the writer, and full details of this case are recorded in the *British Journal of Surgery*, vol. ii, No. 8.

7th January, 1914.—Since October last the patient has had no bleeding until 2nd January, 1914, when he noticed the urine slightly red. Then it became redder, and that night some clots came away. He had very little pain when these clots were being passed, only discomfort in the abdomen immediately above the symphysis pubis. This was present only occasionally, and preceded the hæmaturia. For the first few days after admission the urine was quite red, but on 9th January it was again clear. On 11th January the urine was clear, but contained blood on the 12th, and this was preceded by pain over the pubes. On two occasions attempts were made to use the cystoscope, but a good view could not be obtained on account of the bleeding, and only masses of clot occupying the floor of the bladder were seen.

On 9th January another attempt was made at cystoscopic examination, a large quantity of blood being washed out, also many clots. Ultimately the fluid coming away was quite clear, and, on examination, the opening of the left ureter was seen to be plugged with a considerable blood clot.

On 16th January the bladder was again washed out without difficulty, and a good view was obtained. The opening of the left ureter was dilated, and on an assistant pressing the left kidney between the hands shoots of blood were observed entering the bladder. If much pressure was exercised the quantity of blood escaping became very copious, and was in direct proportion to the amount of pressure employed.

17th January.—Last night, just after passing urine, which was highly coloured with blood, the patient felt that his bladder was again full, and he passed about two pints of what looked to the house surgeon like pure blood. On account of the extent of the hæmorrhage the kidney was at once exposed and removed, and, on examination, the pelvis was found to be occupied by an aneurysm of the renal artery completely filling the cavity.

After the operation the patient was very collapsed, and saline had to be administered intravenously, and later on *per rectum.* At the operation very little blood was lost, but the severe hæmorrhage preceding it greatly exhausted the patient.

18th January.—Ninety oz. of urine passed. On 19th January, 66 oz., and it was clear, containing no blood.

Patient made an uninterrupted recovery. The Wassermann reaction was negative.

In this case the hæmaturia was symptomless until the patient was admitted to hospital on 7th January, when blood clot, obstructing the urinary flow, of course caused some local discomfort, but little more, and was relieved as soon as the clot escaped.

(*e*) *Renal calculus* is nearly always indicated by the two cardinal signs, pain and bleeding, and the former is so constantly present that the absence of suffering is thought by some surgeons to preclude the diagnosis of stone. It must be remembered, however, that hæmaturia may be caused by calculus, and at the same time during the whole course of the case no history of pain is obtainable. Hence the importance in all cases of hæmaturia of having an *x*-ray examination made by an expert. It is necessary to have several plates taken before a negative opinion can be given, and this is particularly desirable when the stone is composed of uric acid.

Symptomless hæmaturia may be met with in cases of renal calculus under two easily recognised conditions. If the calculus is smooth and regular in form, as well as mobile, it may produce pain by acting as a ball valve, and if its surface is irregular the sharp projections irritate and erode the mucous membrane of the pelvis. But if the stone is small and irregular, although smooth, the projections on its surface may cause little or no irritation, while they allow the urine to pass, not valving the flow until the stone reaches the orifice of the ureter. Again, if a stone is firmly fixed in one of the calyces, it may cause occasional small bleedings without pain.

(*f*) In *early renal tuberculosis* hæmaturia may be the only symptom.

Many years ago attention was asked to the significance of hæmaturia in renal tuberculosis, and in some of the cases quoted the bleeding practically was symptomless. That particular aspect of the disease did not call for comment at the time, but with a wider experience the writer is now convinced that in many instances of primary renal infection the tuberculosis manifests itself by bleeding only — other symptoms developing at a later stage of the disease.[9]

In the earlier stages of the disease pain may be entirely absent, and this may continue as long as the tuberculous lesion is confined to the parenchyma.

Hæmaturia is often the first indication of danger that induces the patient to seek advice, and in many instances, unless repeated and most minute examinations are made, the medical adviser may find it difficult to arrive at a satisfactory explanation of the symptoms.

It is when the mucous membrane of the pelvis becomes involved that pain is conspicuous. The absence of the great danger signal, pain, is here a misfortune; less prominent symptoms are liable to be looked upon as not significant, and unless the medical attendant is on his guard, the disease may be permitted to advance undiscovered.

Symptomless hæmaturia in tuberculosis is not uncommon. It is met with in young persons or in children; occasional small hæmaturias, repeated time after time, but the blood lost is seldom great in amount.

The importance of hæmaturia as a premonitory symptom to renal phthisis cannot be over-estimated, especially in view of early surgical interference.

We now come to the *lesions of the kidney, which are manifested by other symptoms besides bleeding.* They may be stated in order of the frequency in which they are met with in practice. The most common are renal calculus, tumours, tuberculosis, and injury. The rarer conditions causing hæmaturia are polycystic kidney, hydronephrosis, adrenal tumours, serous cysts, and diseases of the ureter.

(*a*) *Renal calculus.*—The two characteristic indications of stone in the kidney are hæmaturia and renal colic. The quantity of blood may be small, microscopic in quantity, or it may be so abundant as to form clots in the ureter or in the bladder. When the blood is microscopic only, it is well to examine quantities passed at different times of the day and compare them with one another. The urine passed at the end of the day, or after the patient has taken vigorous exercise, contains more blood than when he has been at rest.

Next to pain, the appearance of blood in the urine is the most usual cause of alarm, and the reason why the patient consults his physician. It is one of the most frequent signs of renal calculus, and the most obvious characteristics of this form of hæmaturia are that the bleeding is seldom profuse or obstinate. The blood is generally light in colour, and the hæmorrhage is, as a rule, brought on by sudden movements or active exercise, and it is associated generally with severe colicky pain. These circumstances, when accompanying or determining the hæmaturia, give the symptom its special value. It is wrong to suppose that hæmaturia is a necessary consequence of renal calculus, and must be found before a diagncsis of stone is made. In cases of renal calculus without suppuration, especially if the stone be impacted in the renal substance, the symptoms are not marked; indeed, the only indication of disease may be occasional slight renal pains, with or without hæmaturia, or severe pain may exist for a time and then disappear for a long period. It is in such cases that the diagnosis of renal calculus is difficult, sometimes quite impossible without the aid of the x-rays. There may be renal pain, frequent micturition, slight hæmaturia, or even the presence of small quantities of pus in the urine caused by an undue increase in the free acid in the excretion, or from oxaluria. The habitual deposit of uric acid or oxalate of lime in urines of high specific gravity is often associated with dyspeptic, nervous, and other symptoms strongly suggestive of renal calculus. These may last for long periods, but if suitable treatment be adopted they usually disappear. On the other hand, considerable, sometimes enormous, stones may be discovered in the kidney by means of the x-rays or after death, although no renal disturbance had been known to exist at any period during the life of the patient. The latter is not uncommonly observed in hospital practice. Under such circumstances the want of knowledge may reasonably be attributed in some cases to the carelessness of the patient, but such an explanation cannot be urged in several instances which have come under our notice in private practice.

In calculus, hæmaturia is one of the most important symptoms. But while, on the one hand, it may be true to state that of all causes of hæmorrhage from the kidney calculus is the most common; on the other hand, a calculus may occupy the kidney without at any time causing the patient to lose a perceptible quantity of blood. When the surface is smooth, as in many instances of uric acid calculus, little injury of the mucous membrane is produced, and on examination only traces of blood may be occasionally met with. Although constantly present or oft repeated, hæmaturia from calculus is rarely so profuse as to cause marked anæmia. The urine is generally pink or bright-red in colour, the blood being diffused through the urine; but if acid in reaction on standing, the blood corpuscles are readily deposited along with their colouring matter, so that the supernatant fluid is left clear. It may, however, be dark porter or coffee coloured, with a very dark sediment on standing. In the hæmaturia from renal calculus, casts of the ureter and calyces are rarely found. Perhaps the most characteristic feature of calculus hæmaturia, as distinguished from other forms, is its dependence upon movements of the body. Sometimes the appearance of blood or an increase in the hæmorrhage does not immediately follow exercise, but only shows itself after some hours or even days, Only in rare instances is the hæmorrhage considerable so as to become dangerous. Such cases have been recorded from time to time. In one reported by Schede an oxalate of lime calculus the size of a cherry pip eroded a branch of the renal artery, and at the necropsy was found in the pelvis of the kidney. A patient admitted into the "Central Home" complained of repeated attacks of pain limited to the right lumbar region, with frequent micturition and occasional profuse hæmaturia, which was set down to tumour of the kidney till we had an x-ray photograph taken, when a mulberry calculus was found loose in the pelvis, the mucous membrane of which was found at the operation to be considerably eroded.

In some cases casts of the ureters are formed by coagulation taking place within the ducts, and with the cystoscope they may be seen protruding from the mouth of the ureter. During micturition the casts are broken up and their characteristic form lost.

The presence of blood in purulent urine is not of the same significance as even minute quantities in sterile urine, for the simple reason that in septic cases the whole circumstances are more complicated, and the blood may be derived from many sources other than from the friction caused by the calculus.

Hæmaturia may follow the spontaneous evacuation of a pyonephrosis, even although blood cannot be discovered in the urine at other times.

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(*To be continued.*)

A GANGLIONEUROMA OF THE SPHENO-MAXILLARY FOSSA.

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Introductory.—It may be said, from a consideration of tumours in general, that the proneness of a particular tissue to tumour-growth is to a certain extent proportional to the degree of proliferative and regenerative activity retained by the tissue in adult life, and in inverse ratio to the degree of specialisation of its function. This is illustrated, for example, by the great frequency of tumours on epithelial surfaces, in the mammary gland, in the uterus, or in bone, and by their seldom primary occurrence in the substance of the liver or kidney, or in cardiac or voluntary muscle. The general statement has not, of course, anything like the force of a law, for notable exceptions occur, such as the blood-vessels, which have very active regenerative powers, but are relatively little liable to tumour-growth. Also, no doubt, other factors, such as liability to damage from one cause or another, play an important part in the incidence of neoplasms. Still, there is no doubt that the extent to which the elements of a tissue are able to proliferate is of some importance in determining the frequency of tumours of that tissue.

The tumours of the nervous system illustrate the point in a somewhat notable fashion, and here we may remark that in the various parts of the nervous system we have true nervous tissues, and also tissues of a much lower grade, such as white fibrous tissue, in close association, and subjected to much the same local influences at any rate. However, among the tumours of the nervous system we find that a large proportion are not tumours of nervous matter, but are composed of elements derived from the supporting tissues. Examples of this are found in neurofibromatosis of the peripheral nerves or of general distribution, and in the fibro-endotheliomata or psammomata of the meninges. Again, where the tumours are actual derivatives of nervous tissue in the central nervous system, it is found that the overwhelming majority are gliomata, derived from glial cells which retain a considerable proliferative power, while tumours growing from the highly specialised nerve-cells are among the greatest of rarities.

That tumours of the kind do occur has long been recognised, and in recent years more extensive examinations and improved methods of investigation have led to a greater number of them being recorded, but still they appear to be of very infrequent occurrence.

In a previous paper[4] referring to this subject a list of published cases, as far as possible complete, was given; it comprised fifty-one cases, the earliest of which was described by Loretz[1] in 1870. This number, though not relatively large, is sufficient to allow of some general statements with regard to the tumour, which may be of interest in introducing the present case. It may be noted incidentally that the present is the fourth case to be described from Glasgow and the West of Scotland, the other three having been reported by Paterson,[2] Adams,[3] and Monro and Dunn.[5]

The tumours are characterised by the fact that the cells composing them are for the most part ganglionic nerve-cells, more or less typical in structure, and accompanied by the usual processes, the axis-cylinders. The latter may be unaccompanied by any form of sheath, or may possess primitive sheaths only, or may be enclosed also in medullated sheaths. The degree of closeness with which these highly specialised nervous tissues are copied is remarkable. The localisation of the tumours is noteworthy; the great majority (forty-one out of fifty-one) being situated in some part of the sympathetic nervous system, only four being found in the central nervous system, and the remainder apparently arising from peripheral nerves. Of the latter it is possible that some, arising in connection with cranial nerves, were really derived from sympathetic elements in these structures. In any case, it may be said that the site of election of the ganglioneuroma is the sympathetic system, and also it is true that the great majority of all tumours of the sympathetic system are ganglioneuromata. The tumours may occur in any part of the lateral chains or their branches, but are most common in the abdominal section. That so many as eleven tumours have been found in, or in close relation to, the suprarenal bodies is an interesting corollary to the now well-established fact that the medullary portions of these organs are derived from the sympathetic. In two remarkable cases the tumours were multiple, numbering in one case sixty, in the other about one hundred and sixty, and were situated subcutaneously; they were not, however, attached to peripheral nerves, but to blood-vessels, and had originated, no doubt, from twigs of vasomotor nerves—also from the sympathetic nervous system.

Ganglioneuromata are not confined to any particular age-period, but have been observed at all ages from early infancy to old age. They tend, however, to be more common in younger subjects, and also tend to be of larger size according as the age of the patient is less. The largest described have been about the size of a child's head. Sex does not appear to be an important factor in determining their incidence.

As a rule, the tumours are encapsuled and quite simple in character, and there are records of successful surgical removal in seven cases, but frequently the deep situation and closeness of the growths to vital organs is such as to render difficult or impossible the removal even of those which are histologically simple.

When malignancy occurs in these tumours it is accompanied by phenomena of great histological and embryological interest. The original primary tumour may show in part the structure of typical ganglioneuroma, but the malignant parts are composed of small cells only, which correspond in appearance to the embryonic cells, or neuroblasts, which are seen in developing nervous tissues in the early fœtus. The metastatic deposits also generally show only these embryonic forms. The explanation of this is no doubt that the tumours, like the normal nervous tissues, are originally derived from neuroblastic tissue, and that in certain cases some of that tissue persists in its embryonic form, while the bulk of it develops to more mature and resting stages. When malignancy occurs it does so in a focus of undifferentiated neuroblastic tissue, and not in the ganglionic cells, which have little or no proliferative power. A brief reference may also be made here to the fact that the other main tumour of the sympathetic nervous system is the neuroblastoma, that is, a tumour composed, to begin with, of embryonic nerve-cells, and primarily malignant. It occurs almost invariably in young children, and is most common in the suprarenal bodies. The differentiation of this tumour out from the general mass of "round-celled sarcomata" is of comparatively recent date. As might be expected, it is practically identical in structure with the malignant parts of those ganglioneuromata which take on malignant characters, and the two forms of tumour, having the same origin, are to be looked upon as closely allied.

The present case.—The patient from whom the tumour was removed was a boy, aged 3 years, who had previously been quite healthy. A swelling was first noted three weeks before operation on the right temple, just behind the frontal process of the right malar bone. It was apparently of the size of a marble, and had a cystic feeling. At the operation on 12th May, 1915, it was found that the tumour was entirely covered by the temporal muscle, and when the latter was withdrawn it was seen to be encapsuled. When removal was attempted it was found that the tumour lay directly on the bare bone of the wing of the sphenoid, there being no intervening periosteum. The upper part was separated off readily enough, but a prolongation was found to extend downwards into the spheno-maxillary fossa. This part was ligated as low as possible, but the tumour could not be removed intact. It was remarked after removal that there had been a fairly complete capsule. The contents resembled grey matter of the brain.

The material received for examination consisted of a number of small pieces of tissue amounting in all to a mass the size of a small marble. The material was all fixed in alcohol, its nature not being suspected, and sections prepared by the paraffin process.

In the first sections made, stained with hæmalum and with eosin or with Van Gieson's stain, it is found that some parts of the tissue are highly cellular, and have only a very scanty fibrous stroma, while in other portions there is an abundant fibrous stroma arranged in broad interlacing bands, and the cells, many of large size, are proportionately much fewer.

The latter portions, which present the most remarkable features, will first be fully described. It is first noted that in large spaces which occur here and there between the fibrous-tissue bundles, there are groups of cells of greatly varying size; these are accompanied by varying amounts of fibrillar material which stains brown with Van Gieson's stain, thus differing entirely from the pink-stained connective-tissue fibres. With ordinary stains it is observed that some of the larger cells in these areas have the characters of ganglionic nerve-cells. The characters of the ganglionic cells are fully demonstrated in sections stained by Nissl's method, and with ordinary methylene blue. The more typical forms present large protoplasmic bodies with well-defined conical processes tapering off to form fibres. In some there is abundant tigroid material, staining metachromatically by Nissl's stain, but definite granules are not observed. The nuclei are large, clear, and of vesicular appearance, and contain large well-defined nucleoli (Fig. 1). Aberrant forms with two, three, or even more nuclei are frequent, and in some parts these cells occur in closely packed clusters of eight or ten, imperfectly separated from one another, but still retaining their ganglionic characters. In others all degrees of degeneration are exhibited, with loss of nucleus and appearance of balls of hyaline material in the protoplasm. In addition to these definitely ganglionic cells, there are present in varying numbers cells with smaller and darker nuclei and less abundant protoplasm; the larger of these closely resemble small ganglion cells, and a complete series of intermediate forms can be traced down to cells little larger than lymphocytes, in which the nuclei stain very darkly and the protoplasm is extremely scanty. The appearances are such as to indicate that these smaller cells represent the early embryonic forms from which the larger nerve-cells have developed.

In addition to, and quite distinct from, these elements there are found, generally in close relation to the masses of ganglion cells in certain areas, numerous cells of uniform appearance, with elongated, darkly staining nuclei. These generally lie with their long axes parallel, and often occur in sheaves of considerable extent. Similar cells, though in smaller numbers, can be recognised in the fibrous tissue. They present the appearance of the cells of the primitive sheaths of nerve-fibres, and further examination proves this to be their nature.

In order to demonstrate the presence of axis-cylinders, some portions of tissue were removed from the original paraffin blocks, and after being carried back through xylol and alcohol to water, were treated by the silver impregnation method, as applied by Levaditi for the demonstration of spirochætes in tissues. This forms a ready and reliable method for axis-cylinders, and the sections can be counter-stained with methylene blue to bring out the cells as well. The results obtained in the present case are excellent. Axis-cylinders, appearing as dark threads, can be traced in great numbers issuing from the ganglion cells, and passing in every direction around these structures, and also out into the fibrous tissue (Fig. 2). Branching is frequently observed, and around many ganglion cells there are seen close basket-like networks of the fibres. The elongated nuclei of the primitive sheaths are seen to be closely applied to these axis cylinders, thus proving their nature. Where the fibres enter the fibrous tissue they generally run in parallel lines, enclosed between the parallel connective tissue fibres, and they are there also accompanied by sheath cells. As the material had all been fixed in alcohol, it is not possible to demonstrate the presence of medullated fibres.

In the highly cellular portions of the tumour the appearances differ markedly from those described. In the first place, there is only very scanty fibrous tissue, and what of it occurs is present only around the walls of the blood-vessels. The latter are fairly numerous, and are wide and thin-walled. As the numerous cells are spindle-shaped and round, the general structure at first sight suggests a spindle-celled sarcoma, in which the appearance of round cells is due to the spindle-shaped forms being cut transversely. On closer inspection, however, it is found that the two forms of cells represent structures of quite different kinds. The elongated forms tend to occur in bands in which the individual cells lie parallel, and these bands form an irregular wide meshwork throughout the tissue, while it is in the interstices of this that the round cells occur in masses (Fig. 4). The spindle-forms have nuclei, of which the length is from two and a half to three times the breadth, and have elongated protoplasmic bodies resembling short fibres, and fairly bulky. The rounded cells have only very scanty protoplasm, and their nuclei are, in general, broader than the narrow diameter of the spindle-forms. Again, the nuclei of the elongated cells are rather poor in chromatin, while the round forms stain darkly with all stains. The spindle-forms are pretty uniform in size; they are comparable to the sheath-cells in the fibrous part of the tumour, but have more protoplasm and slightly larger nuclei. The round cells, on the other hand, show some variation in size, and, indeed, large forms occur among them which strongly resemble ganglionic cells, though only in a few is the nucleus of typical vesicular form (Fig. 3). Considerable light is thrown on this point by examination of sections stained for axis-cylinders, for it is then seen that a considerable number of axis-cylinders are present, and that they almost always lie in close apposition to the spindle-cells, and in some cases appear to be enclosed in the protoplasm of these structures. They show, in fact, the same relation to these cells here as they do to the sheath-cells in the fibrous areas. On the other hand, they show no special relations to the round cells.

Discussion.—In summarising the histological features, it may be observed that the special staining methods employed leave no doubt as to the nature of the fibrous parts of the tumour; they represent a tumour of nerve-cells, in which ganglion-cells, sheath-cells, and axis-cylinders are typically represented. The aberrant forms of ganglion-cells which occur are only such as might be expected in a tumour, and such as have been frequently described in tumours of this kind. As regards the cellular parts, the two most salient features are the presence there of axis-cylinders, though less numerous than in the fibrous parts, and the occurrence of a few scattered ganglionic cells. These facts indicate that this also is nervous tissue, and its richness in small cells of embryonic type is simply to be explained by the assumption that it is nervous tissue of embryonic character, or, at anyrate, of a low degree of maturity. It further seems certain that the

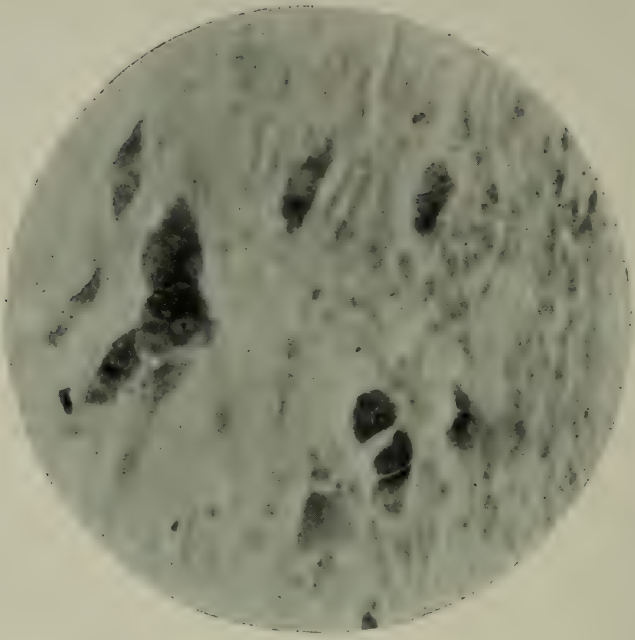

Fig. 1.—Ganglioneuroma. Ganglionic nerve-cells with large vesicular nuclei, occurring singly and in clumps, stained deeply by Nissl's stain. One large protoplasmic mass contains seven or eight nuclei. × 250.

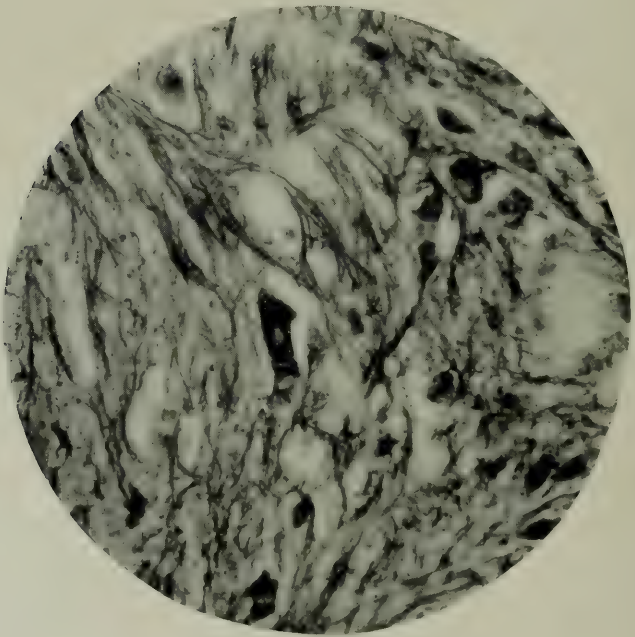

Fig. 2.—Ganglioneuroma. Ganglionic nerve-cells and axis-cylinders shown by Levaditi's silver impregnation method. The axis-cylinders form a close, irregular network; some can be seen issuing from cells. × 250.

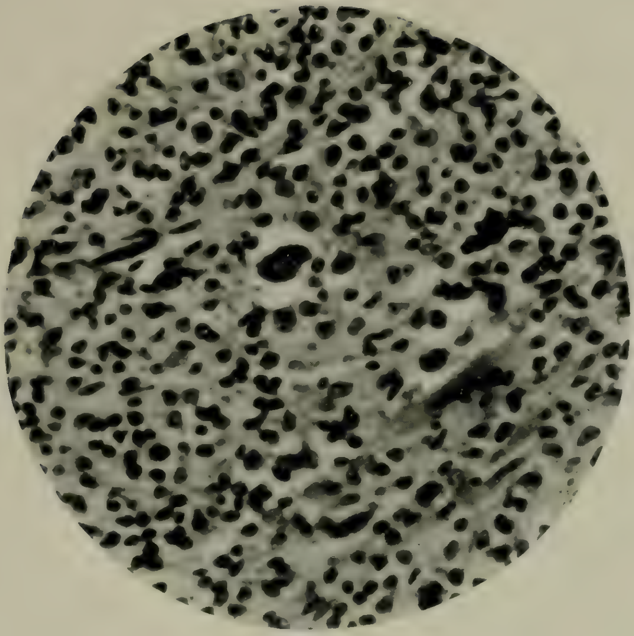

FIG. 3.—Ganglioneuroma. The numerous small cells are neuroblasts, or embryonic nerve-cells. One ganglionic cell is seen near the centre. × 250.

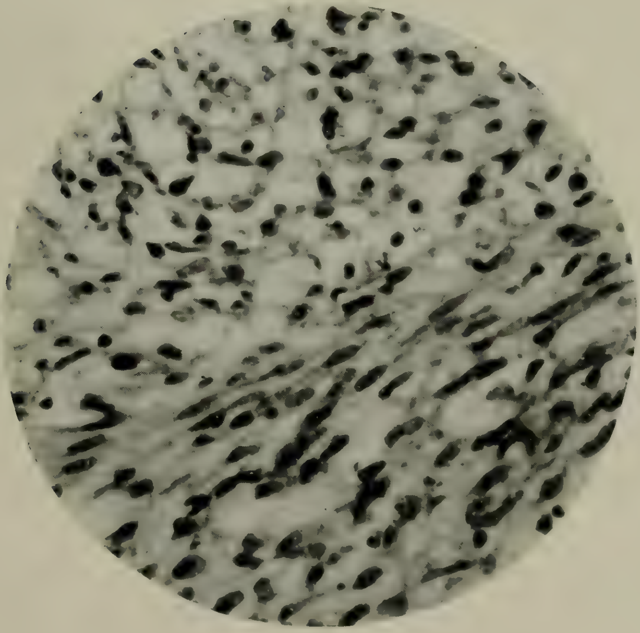

FIG. 4.—Ganglioneuroma. Many of the cells are rounded neuroblasts, as in Fig. 3; but others, with elongated nuclei and long protoplasmic bodies, are probably embryonic predecessors of cells of primitive nerve sheaths. × 250.

spindle-shaped forms are early forms of sheath-cells, while the rounded cells may be either the predecessors of ganglion cells only or may be more primitive forms of neuroblast, from which any of the various forms of nerve-cell may develop. It is to be noted that the presence of such neuroblastic tissue is of unfavourable omen as regards prognosis, for it is just such embryonic tissue, with its high potentiality for proliferation, which is liable to develop malignancy.

The exact origin of the tumour it has not been possible to determine, in absence of a more complete dissection. The nearest ganglionic structure would be the spheno-palatine ganglion, in relation to the superior maxillary division of the fifth cranial nerve. This ganglion, like all the others on cranial nerves, contains elements belonging to the sympathetic nervous system, a fact which would be so far in favour of attributing the tumour to that origin.

I am greatly indebted to Dr. Farquhar Macrae for the tumour, and for permission to make use of the material.

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A NOTE ON TRACHOMA.

By LESLIE BUCHANAN, M.D.,
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In view of the fact that the disease of the eyes which is known as trachoma has, within the last few months, assumed a frequency which may almost be termed epidemic, it is perhaps expedient that a few words regarding its characteristics should be given at this time.

Trachoma is primarily a disease of the conjunctiva, the course of which is extraordinarily slow, and which gives rise to results, in the form of opacity of the cornea, which affect vision in a very serious degree.

Although no organism, vegetable or animal, can be shown to be the definite cause of the disease, it is regarded as undoubted that the condition is transmissible from one individual to another. Generally it will be found that the agent of transmission is the discharge from the affected eyes, carried, by means of towel or other agency, to the eye of the infected person.

In a great majority of cases the disease is not seen by the ophthalmic surgeon until it has assumed a chronic form, when its effects upon vision are manifested.

There are two forms of trachoma, one more acute and striking in appearance, the other seemingly chronic from the beginning. The former is the so-called "papillary" form, the latter the "granular" form.

In the papillary form the conjunctiva of the lids, both lower and upper, becomes greatly thickened, hyperæmic, and velvety in a very notable degree. When the lower lid (or upper lid) is everted a rounded mass of deep red colour presents itself, and adhering lightly to this is seen a moderate amount of discharge. Usually both eyes are affected either simultaneously or at short intervals. Rarely only one eye is affected from beginning to end.

The amount of discharge in this condition is surprisingly small. There is a moderate amount of watering of the eyes, but no pus exudes from between the lids, as in purulent conjunctivitis.

It is probable that if seen at this stage the disease may be cured, provided treatment be energetic enough. The general opinion seems to be that bluestone, rubbed on each day, affords the best chance of obtaining a satisfactory result. If untreated, this form merges, by development of granules, into the second form.

The second form of trachoma is much more frequent, and much less tractable than the former. In this the characteristic is the formation in the palpebral conjunctiva and in the retro-tarsal folds, both superior and inferior, of little granules of lymphoid infiltration. These vary in size from 1 mm. to perhaps 3 mm. in diameter, and have a roughly hemispherical shape and pale pink colour. They are embedded in a deeply congested conjunctiva, and are the origin of the name "granular" conjunctivitis.

In cases which are untreated and also, to a less degree, in cases even thoroughly well treated, the granules arise, burst, and disappear only to give place to others, and the result of this process is the formation of scars, which are permanent and give rise to greater deformity of the conjunctiva and, ultimately, of the lids. The scars bind the conjunctiva firmly down to the subjacent tissue, and rugose formations occur which, being hard and rough, give origin to the name trachoma.

It is usually in this stage that the surgeon sees the disease first, for surprisingly little discomfort is experienced in many cases even up to this stage.

This condition of matters may last for several years, with periods of greater and less rapidity of formation of the so-called granules, without any great discomfort to the patient. The discharge is watery and the eyes are only a little weak. Almost invariably, however, the cornea becomes involved ultimately by constant contact with the roughened lid. The upper part of the cornea becomes roughened and opaque, and blood-vessels in great numbers penetrate from the conjunctiva of the globe under the conjunctiva of the cornea, and give rise to a deep pink patch which is termed "pannus." This area of pannus has usually a sharply defined lower border at first, but later, instead of being present at the upper part of the cornea only, affects other parts of the periphery until the cornea is encroached upon from all sides. Then ulceration of the cornea is liable to occur.

Meanwhile the upper lid, and to a less extent the lower lid, has, owing to the development of cicatricial tissue on its under surface, become curved to an unnatural extent, and the consequence is that the eyelashes are turned inwards and rub on the cornea, giving rise to increased discomfort.

With the development of cicatricial tissue in the lids, the disease, as an active process, comes to an end, and only the sequelæ remain through the remainder of life to stamp the individual as infected and a possible source of danger, as being infectious.

If the disease is thoroughly and energetically treated by bluestone or some substitute, it may be cut short, and the eye may become perfectly sound, except that cicatrices exist in the palpebral conjunctiva.

The conditions which simulate trachoma are follicular conjunctivitis, which usually affects children and which is curable, and tubercular conjunctivitis, which sometimes strongly resembles trachoma.

Follicular conjunctivitis usually involves only the lower *cul-de-sac*, and is somehow allied to the strumous condition. Tubercular conjunctivitis tends more than does trachoma to the formation of granulations of large size.

EXTRA-UTERINE GESTATION WITH INTRA-UTERINE PREGNANCY—OPERATION—THE UTERINE PREGNANCY PROCEEDING TO TERM.

By WM. D. MACFARLANE, M.B., C.M., F.R.F.P.S.,

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MRS. M., aged 29, was admitted to the Royal Samaritan Hospital for Women with attacks of severe abdominal pain and uterine bleeding of twelve days' duration. Her periods had always been normal save for two years' amenorrhœa, the cause of which was not ascertained. Her last period was on 23rd August, and she was admitted to hospital on 2nd October. There had been no former pregnancies.

Twelve days before admission patient had very severe pain in the lower part of the abdomen in the right iliac region. This attack of pain lasted for about one hour, and then passed off. She felt very faint and sick. There was another severe attack of pain six days later. It was sudden in onset, and lasted for about eight hours. After the first attack there was slight hæmorrhagic discharge, and this was present with the succeeding attacks of pain which occurred daily till her admission to hospital. Since the onset of her illness there had been a frequent desire to empty the bowel, with considerable tenesmus and straining. There had been painful and frequent micturition. On admission she was very anæmic.

Her previous health history is unimportant.

On examination the abdomen was distended, tender to pressure in the right iliac region, and dull to percussion all over this area.

Examination *per vaginam* revealed a nulliparous cervix lying behind the symphysis pubis, and an enlarged uterus in retro-position. The pouch of Douglas was filled by a tender semi-fluctuant swelling.

Examination *per rectum* revealed a large bulging swelling which was exquisitely tender to pressure.

Under chloroform and ether anæsthesia the abdomen was opened in the middle line by a sub-umbilical incision. There was a large quantity of blood in the abdomen. The pouch of Douglas was filled with recent coagula, the right tube was enlarged to the size of a walnut, and with the ovary was embedded in clot. The right tube and ovary were removed, and, as there was considerable thickening and occlusion of the left tube, it was also removed, along with an enlarged ovary.

The pathologist reported that there had been an incomplete tubal abortion. The left ovary was cystic and contained a corpus luteum; the right ovary also contained a large corpus luteum.

Despite the ablation of the corpora lutea, pregnancy was undisturbed, and proceeded satisfactorily to full term.

A similar case was reported by me in the *Journal of Obstetrics and Gynæcology* in 1911.

SIMPLE PEPTIC ULCER AND MALIGNANT DISEASE OF THE STOMACH.

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Physician, Glasgow Royal Maternity and Women's Hospital;
late Examiner in Systematic and Clinical Medicine,
Glasgow University.

(*Concluded from* p. 34.)

Gastric carcinoma probably occurs more commonly in men than in women. It is not easy to give a satisfactory explanation of this sex incidence. Possibly the evil effects of alcoholism are predisposing factors. It should also be observed that duodenal ulcer is more frequently met with in men than in women, and if we could establish in the majority of cases of carcinoma a history supporting the diagnosis of bygone ulceration, we might reasonably correlate the two conditions. From the situation in which gastric carcinoma is most commonly found, we seem to have suggestive evidence of this connecting link. Probably not less than from 60 to 80 per cent of cancers are situated at the outlet of the stomach. Is this brought about by a previous damage to the mucosa of the pylorus inducing a special predisposition to carcinoma in this situation? It is undoubtedly true that a number of pyloric carcinomas seem to have originated in the scar tissue of an old ulcer, and I have repeatedly seen cases of chronic peptic ulcer become the seat of carcinomatous infiltration. Indeed, the process of this neoplastic development can almost be followed at the bedside from the altered symptoms, signs, and laboratory findings. But while all this is true, it is very certain that in the vast majority of cases cancer of the stomach begins with remarkable suddenness, and without any previous history of digestive ill-health. My own observations lead me to believe that the majority of such cases occur in men over 50 years of age who hitherto have had perfect digestive health. Cancer of the stomach is less common in women. Now, if scar tissue, resulting from ulceration, was specially liable to become the seat of engrafted carcinoma, ought we not to find malignant disease of the stomach as common in women as in men? It is therefore difficult to believe that previous ulceration is an important pathogenic factor in gastric carcinoma. The dictum that every chronic peptic ulcer is potentially a cancer must be accepted with considerable reserve. The proclivity with which malignant disease locates itself at the outlet of the stomach must, then, have some other explanation. Probably duodenal ulcers have a greater tendency to become chronic and resist treatment than ulcers situated elsewhere. The outlet of the stomach is subjected to a greater amount of functional activity, strain, and irritation than the interior of the viscus, and this may play an important part in determining the site of the malignant disease.

In many instances cancer of the stomach may reach quite an advanced state without giving rise to any serious trouble. So far as local symptoms and signs are concerned, it should be noted that these are greatly dependent on the situation of the neoplasm.

As in the brain, so in the stomach, there are many areas which may be regarded as latent or silent. A cancerous growth may attain a very large size in the region of the cardia without declaring its presence till the œsophagus becomes implicated. We may also have almost the entire mucosa infiltrated, and the whole stomach wall involved (*cancer en nappe*), without any special local disturbance to indicate the true nature of the disease as long as the inlet and outlet of the stomach are not interfered with. Such cases are sometimes not diagnosed till the condition is revealed by a *post-mortem* examination. When symptoms of these latent forms of cancer exist they are of the type belonging to pernicious anæmia and other diseases associated with a cachexia. Thus it is not uncommon for cancers to remain undiagnosed during life which are situated in some silent area of the gastric wall.

The *history, symptoms,* and *signs* of gastric carcinoma are fairly stereotyped. A man of some 50 to 60 years of age who has previously enjoyed excellent general and digestive health begins to lose weight and colour. His appetite, formerly good, progressively fails, and later on is lost altogether, or may even be replaced by a positive loathing for food. His bowels for the first time in his life begin to give him trouble. He finds that he is becoming progressively more constipated, and has to rely on increasing doses of purgative medicine for relief. He becomes gradually weaker, and is easily tired and disinclined for work. His tongue becomes dirty and his breath bad. Nausea more or less constant, with occasional vomiting, is added to his symptoms. Pain now becomes a usual feature of his case. The pain may be aggravated by the ingestion of food, but it is, unlike that associated with peptic ulcer, of a more persistent and indefinite character. Flatulent and fluid eructations are common. These eructations, or the vomit, are offensive in smell, and often very sour in taste. The vomitus may be discoloured from the presence of altered blood. As bleeding is usually small in amount it takes the form of coffee grounds. It may be occult. The stools are frequently offensive, and may become darker in colour or black according to the proportion of blood which is present.

Such a history, though by no means conclusive, is very suggestive of gastric cancer. Many of the symptoms are, however, common to other diseases. The gastro-intestinal disorders accompanying cirrhosis of the liver, Addison's disease, exophthalmic goitre, and pernicious anæmia present, from time to time, a clinical picture which differs little from that of cancer of the stomach. Perhaps the greatest difficulty is presented in the differential diagnosis of pernicious anæmia and cancer of the stomach. An examination of the blood will be most informing, and the picture of a well-marked secondary anæmia will support the diagnosis of malignant disease. When there is marked stenosis and much vomiting in carcinoma there may be a reduction of the volume of blood and a relative increase in the red blood corpuscles. It is rare to find the red cell count below one million, and, indeed, any reduction approximating to this figure is rather suggestive of pernicious anæmia. In this latter disease quite frequently the most urgent symptoms are those of gastro-intestinal derangement with nausea, vomiting, and hæmorrhage from the stomach or bowels. It is not difficult to fall into the error of diagnosing an organic disease of the stomach. This is all the more likely to be the case if too much be made of the achylia common to pernicious anæmia and gastric carcinoma. In pernicious anæmia we not infrequently have a subfebrile movement, and as this may also be a feature of gastric carcinoma, the difficulty in differential diagnosis may be accentuated.

A cancer at the outlet of the stomach does not take long to declare its presence, for then all the phenomena of retention are soon added to the other symptoms of the disease. Sooner or later a tumour may be felt under the upper belly of the right rectus. It may for long remain freely movable, and will be found in varying positions according to the amount of food in the stomach and the posture of the patient. The discovery of a tumour at the pyloric region is not always to be regarded as conclusive evidence of malignant disease. A chronic duodenal ulcer with much infiltration and perigastric adhesions may produce quite a palpable tumour, and even when a laparotomy is performed it may be macroscopically regarded as cancerous till its simple character is revealed by histological examination. In any case, to wait till a case of suspected gastric carcinoma is associated with a tumour is to delay till all hope of effective surgical interference is gone. No doubt if gastric carcinoma, in an operable situation, could be early recognised or even strongly suspected from the history, symptoms, signs, and a study of the gastro-intestinal chemistry, surgical interference might be undertaken with a prospect of success. It is equally wrong to wait till evidence of the malignant nature of the condition has been established by the development of metastatic growths. The discovery of induration and enlargement of the supra-clavicular (Virchow's gland) or inguinal glands, or of involvement of the umbilicus rules as out of the question anything but palliative surgery.

Visible peristalsis is a proof of the presence of stenosis. Vomiting then becomes very constant, is large in amount and occurs more frequently in the afternoon and evening from the accumulation of the day's diet. The stomach behaves as does the heart when one of its chambers has to overcome some obstruction to the onward flow of blood. It hypertrophies and, if the obstruction is not relieved, the compensation, through lapse of time, fails, peristalsis diminishes and then ceases, and the stomach becomes progressively dilated. The patient then goes downhill very rapidly from complete failure to absorb nourishment and the severe auto-intoxication which results.

Physical examination carried out in the ordinary way may yield no important results, but sometimes inflation of the stomach reveals the presence of a tumour or thickening which had not hitherto been felt. *X*-raying should not be neglected as an aid to early diagnosis in gastric carcinoma. The presence of a neoplasm or of a cancerous infiltration often alters the outline of the stomach. Any delay due to atony or stenosis will also be detected.

The surgeon has good ground for complaint that cases of gastric carcinoma reach him too late, but it must not be forgotten that, in the great majority of cases, the physician is no more favourably situated. No line of investigation which promises to facilitate the early diagnosis of gastric carcinoma should be left unexplored. An examination of the blood, of the urine, and a study of the gastro-intestinal chemistry will afford important additional evidence for or against malignant disease. No one positive test is diagnostic of cancer, but by a careful consideration of the data gathered by all the methods at our disposal, in conjunction with the clinical history and physical examination, much light may be thrown on an otherwise apparently obscure case.

There are often *alterations in the urine* which are not without significance. In all cases of suspected cancer the urine ought to be subjected to examination for—

1. *Indican.*—This substance is found in many other conditions, but it is frequently persistently present in great excess in gastric carcinoma. It is probably formed from intestinal putrefaction due to stasis and alterations in the gastro-intestinal chemistry, especially to the absence of hydrochloric acid in the chyme.

2. *Acetone.*—Acetonæmia is produced in these cases partly by the accompanying starvation of the tissues and gastro-intestinal auto-intoxication.

3. *Chlorides.* — These are usually distinctly defective in amount. They are principally derived from the food ingested. The most of the chlorine excreted is in combination with sodium in the form of common salt. Normally from 170 grains to 230 grains of sodium chloride are excreted daily. If other causes of decrease in the chlorides can be eliminated, and we find a persistently low output, we have presumptive evidence

of a poor appetite and defective digestion. These conditions are strikingly present in gastric carcinoma. For work at the bedside the rough estimation with silver nitrate will suffice. In two test tubes place 5 c.c. of normal and suspected urine (freed from albumen if this is present), and add 10 drops of pure nitric acid and 5 c.c. of a 1 in 20 solution of silver nitrate. Set aside and compare the size of the precipitates in the normal and suspected urine.

Next the *gastro-intestinal chemistry* should be studied by means of the same test meals as are employed for investigating a suspected peptic ulcer. When the breakfast is removed one hour after its ingestion if cancer of the stomach be present it will have the following characters:—

1. It will probably be *excessive in quantity.* Not infrequently it will be more than the amount actually taken. The large return is due to retention from stenosis or defective motility. In gastric carcinoma, sooner or later, the motor efficiency of the stomach becomes compromised. Positive information may also be derived from extracting the contents from the fasting stomach. Normally about 15 to 30 cubic centimetres of gastric juice, free from hydrochloric acid, may be obtained, but in carcinoma these quantities are increased and not infrequently doubled.

2. There will be a *varying proportion of remnants of the test supper.* The cranberries or currants will be found in proportion to the amount of gastric stasis present. When they are abundant it is almost certain that we have stenosis at the outlet. Unless the stomach has been previously washed out, not only may the supper of the night before, but remnants of previous meals be represented in the contents extracted.

3. There will probably be an *excess of mucus.* This is in striking contrast with peptic ulcer. The mucus is derived from an accompanying catarrh. It is quite commonly stained reddish-brown or brown from altered blood.

4. The *odour* is usually *offensive* and sour.

5. The *filtrate* submitted to chemical tests will show a *diminution or absence of free hydrochloric acid.* When the congo-red paper is dipped into the filtrate most likely it will become bluish-brown or brown. This indicates the absence of free hydrochloric acid and the presence of organic acid.

Blue litmus paper should then be used to get an idea of the degree of acidity present. If organic acid be abundant the blue litmus will become vividly red. It is just in such a case that the quantitative determination of the total acidity is valuable. When the free hydrochloric estimation is low and the total acidity high the discrepancy is due to the formation of organic acid.

6. Whenever a serious diminution or total absence of free hydrochloric acid is found a qualitative and quantitative estimation for *lactic acid* ought to follow. The usual Uffelmann's reagent employed for its detection is not free from objection and fallacy. It is not very delicate, and a positive reaction may be obtained when no lactic acid is present. It should be noted that peptone, sugar, and alcohol all give a positive reaction. To eliminate these substances and avoid fallacies an ethereal extract of the gastric juice should be made. The ether extracts only the lactic acid which, however, must be present in appreciable quantity to be detectable. The best method for the extraction of the lactic acid is that of Strauss. It is not necessary, though it is convenient, to use his separating funnel. The whole test can quite well be carried out in ordinary test-tubes. (*a*) Put about 5 c.c. of the gastric filtrate into a test-tube. (*b*) Add 20 c.c. of ether, shake well together and set aside for a few minutes. (*c*) Run off the ether, containing any lactic acid which may be present, into another test-tube and add to it 5 c.c. of distilled water. Shake well and allow the water to settle to the bottom. The water extracts the lactic acid from the ether. (*d*) By means of a pipette remove the ether and add to the watery extract which remains two drops of a 1 in 9 watery solution of ferric chloride. Shake together and note the depth of the greenish-yellow colour which is formed. By comparing this colour with the chart of Strauss a quantitative estimation may be made. Lactic acid in small quantities is not alone found in gastric carcinoma, but when it is present in considerable amount it almost always indicates it.

7. Normally the *fatty acids* are not found in the gastric contents after an Ewald's breakfast. Butyric acid can be recognised by its smell of rancid butter. When fatty acids are present in quantity they are rather significant of carcinoma.

8. The search for *occult blood* in gastric carcinoma (conducted as already described) is very important, and may at once enable a reliable diagnosis to be made. Occult blood is nearly always found in the fæces (after a hæmoglobin-free diet), and very commonly in the gastric content, although in the latter it is not so diagnostic. If occult blood in the fæces is persistently absent for a period of time it is strong evidence against the existence of cancer, even though the gastric contents be achylic.

The most difficult cases to appreciate correctly are those in which we have simultaneously a peptic ulcer and a cancer. This is not an uncommon condition. A chronic duodenal ulcer may, from long continued irritation, become the seat of cancerous growth.

In the early stage of the change the findings are rather those of the ulcer than of the malignant disease. When we have had certain knowledge of the existence of a chronic ulcer, and when from certain changes in the symptoms, signs and chemical reactions we presume that malignant disease may have begun, the best differential test is that of Gluzinski. The contents of the stomach are examined three times in a single day—(1) In the early morning the contents of the fasting stomach are extracted, and the stomach is washed out with warm water till a clean return is obtained; (2) a test breakfast of egg albumen is then given and later removed; (3) three hours later a test dinner of beef steak and mashed potatoes is administered. If the filtrate resulting from any one of these operations is defective in free hydrochloric acid we are probably dealing with an engrafted cancer.

The other conditions which are apt to be mistaken for carcinoma are the symptomatic achylias. It may therefore be advantageous to compare and contrast the findings in the returned meals in a *simple* as distinguished from a *malignant* achylia, as well as to note the differences in the character of the blood picture and in the urine.

	Simple Achylia.	Malignant Achylia.
Blood—		
	Usually no marked change.	Secondary anæmia; eosinophilia; occasionally an *apparent* polycythæmia.

SIMPLE ACHYLIA (*continued*).	MALIGNANT ACHYLIA (*continued*).
Urine—	
No marked change.	Indican excessive; chlorides defective; acetone present.
Test breakfast—	
Very small return.	Excessive return.
Contents very thick.	Usually fluid.
No mucus.	Much mucus.
Quite undigested.	Quite undigested.
No remnants from other meals.	Remnants from supper or previous meals.
Odour not offensive or abnormal.	Very offensive; sour.
Free hydrochloric acid absent.	Very defective or absent.
Lactic acid absent.	Lactic acid present.
Occult blood absent in breakfast and fæces.	Occult blood present in breakfast and fæces.
Wolff-Yunghaus albumen test—	
Albumen will only be found in the two first tubes (negative reaction).	Albumen will be found in all the series of tubes.

Special tests.—A very large number of special tests have recently been brought forward as an aid to more certain diagnosis of malignant disease of the stomach. Even though it be true that no one of them is diagnostic, presumptive evidence of malignant disease may be obtained from their employment, enabling the physician to advise an earlier laparotomy. Of the recent special tests, I have found the following of considerable value in cancer of the stomach:—

Wolff-Yunghaus test.—When the test breakfast is extracted and found to contain no hydrochloric acid, if the clinical picture does not exclude the possibility of cancer, the test ought to be made. It is based on the fact that when hydrochloric acid is absent no soluble albumen should be formed and appear in the filtrate. If we find that a considerable amount of albumen is present in the gastric juice which is achylic, it is obvious that it has not been derived from the digestive act. It is assumed to come from the cancer "juice" or "milk." Before the test is carried out blood must be tested for and excluded, as otherwise the reaction would be positive from the albumen derived from the blood. The gastric juice is diluted as in the accompanying table. The test reagent to show the presence of albumen is made thus:—

Phosphowolffram acid,	. . .	0·3 part.
Hydrochloric acid,	. . .	1 ,,
Alcohol,	. . . . .	20 parts.
Water,	. . . . up to	200 ,,

This reagent is floated on to the top of the diluted gastric filtrate with great care to prevent intermingling. The formation of a white ring of coagulated albumen at the junction of the two fluids is a positive reaction if it forms at once. (*a*) When hydrochloric acid is present in a well-digested meal albumen will be found in all the tubes; (*b*) when we are dealing with a benign achylia albumen will be found only in the dilutions up to about 1 in 20; (*c*) in malignant achylia a positive reaction for albumen will be found in all the tubes, and even in a further dilution of 1 in 400.

1	2	3	4	5	6	Test Tube.
1 in 10	1 in 20	1 in 40	1 in 80	1 in 100	1 in 200	Gastric Filtrate.
W.M.	W.M.	W.M.	M.	T.	F.T.	Normal.
M.	T.	O.	O.	O.	O.	Benign Achylia.
W.M.	W.M.	W.M.	W.M.	W.M.	M.	Malignant Achylia.

W.M. = well marked.
M. = marked.
T. = trace.
F.T. = faint trace.
O. = no precipitate.

Sodium salicylate test.—The stomach is first washed out. Then a solution of sodium salicylate (about 40 grains in half a pint of water) is introduced into the rectum. In another hour the stomach is again washed out with a small quantity of water, and the fluid is tested for salicyluric acid with ferric chloride. If a magenta or violet colour is obtained the reaction is supposed to be positive of cancer. The test is empiric, but I have found it positive in a number of cases known to be suffering from gastric carcinoma.

The *glycyltryptophan test* is probably too complicated for general use, but it has been found reliable in a large number of cases.

The *microscopic examination* of the gastric contents has already been partially dealt with in the previous article on peptic ulcer. When gastric carcinoma is suspected, both the extracted meal and the spontaneous vomitus should be subjected to examination. The *lactic acid bacillus* will almost always be found, and *yeast cells* are often abundant and with a tendency to occur in chains. Sarcinæ are rarely seen in gastric cancer, and when they are present they favour a benign condition. *Pus cells* are not infrequently found, and have diagnostic significance, probably indicating an early ulcerative process in the neoplasm.

The *prognosis* in gastric cancer must remain very grave till we have more certain methods of early diagnosis. If every case in which the disease was suspected were subjected to a complete examination, a considerable advance might be made in the earlier recognition of the condition. If such an investigation does not remove the doubt, the responsibility of refusing an exploratory laparotomy must rest with the patient. While cancer of the stomach may run an acute course, and destroy life in some six months, it is more common to find it progressing slowly for twelve to eighteen months before it terminates fatally.

The *treatment* must depend on the general and local conditions. If surgical interference can be undertaken early there may be a chance of eradicating the disease before metastasis has occurred. If there be serious stenosis a gastro-enterostomy may prolong life and remove the more distressing symptoms. It is always a difficult problem to give advice as to the wisdom of interference. Probably in most cases of advanced disease no operation should be undertaken.

In such cases palliative medical treatment will often give much relief, and even for a time greatly improve the patient's condition. Such treatment consists in *lavage* of the stomach carried out with great care. One pint of warm water may be introduced and withdrawn; a second, containing about 1 drachm of sodium hyposulphite in solution, is given and syphoned off; and a third pint of water is employed to wash out any hyposulphite which may remain. This not only mechanically cleanses the stomach, but is an excellent antiseptic.

The *diet* must be mostly fluid. Meat is generally not well tolerated, but starch may be given if predigested. Raw meat juice and pulp are helpful. Some light solids may be given when the outlet of the stomach is patent. The modified egg-albumen diet of Lenhartz is well adapted for these cases, provided we aid digestion by means of hydrochloric acid. It is still doubtful if pepsin is active when given in mixture along with the acid, but it may be employed if the physician thinks that its use is advantageous. I have found this method of administering the artificial juice quite satisfactory, and have observed in many cases an immediate improvement in the appetite, and, for a time, a steady gain in weight.

℞.—Acidi hydrochlorici diluti,		6 drams.
Glycerini pepsini,		2 ounces.
Resorcin,		24 grains.
Extracti condurango liq.,		6 drams.
Aquæ chloroformi,	up to	6 ounces.—Mix.

Sig.—One dessertspoonful after the three principal meals.

It should be said that the resorcin and the chloroform water are excellent antiseptics and prevent decomposition, while the condurango is a bitter tonic which helps the appetite. The dose of the hydrochloric acid must be large if it is adequately to replace the amount present in normal gastric juice.

Obituary.

BRUCE GOFF, M.D.Glasg., F.R.F.P.S.,
Bothwell.

The medical profession of the West of Scotland has suffered in the death of Dr. Bruce Goff the loss of one of its most distinguished members.

Born in London in 1832, he came, after receiving a private education, to Glasgow University for the study of medicine, entering upon his curriculum in 1849, and taking part of his course in the University of Edinburgh. He took the degree of M.D. of Glasgow University in 1853. In the previous year he had acted as house physician to Dr. James Weir in the Royal Infirmary, and after graduation he continued his residence there as house surgeon under Dr. Lawrie, to whom he later acted for a time as private assistant. A visit to Paris followed, and among the fruits of his work there under such men as Nélaton and Dubois was his election to membership of the Paris Medical Society. Returning to Scotland, he settled in Bothwell, where his success was immediate. His practice grew with the growth of the town and with the development of the mining industry, until it became one of the most extensive in Scotland. Large as it was, however, and great as were its demands upon him during a period of forty-five years, it did not exhaust his energies. He gave much time to the work of the British Medical Association, of which he was a member from an early date, and in 1880 he was elected president of the Glasgow and West of Scotland Branch, succeeding the late Sir William Gairdner in the office. Four years later he succeeded Sir David M'Vail as representative of the Branch on the Central Council, and he held the position uninterruptedly until his retirement in 1908 in accordance with the bye-law limiting the period of service. Throughout that long period of twenty-four years he was constant in his attendance at all important meetings, devoting himself with energy and success to the interests of the general practitioner, and gaining for himself a position of weight and influence in the deliberations of the Council, where his wise judgment brought him respect and his genial personality affection. The obligations under which as a member of the Council he had placed the medical profession were recognised on his retirement at a dinner given in his honour at St. Enoch's Hotel, where he was presented with a service of plate, subscribed for by almost every member of the Branch. His labours in connection with the Association, however, did not end here, for until two years ago he was chairman of his Division, for which he still performed much admirable work. Two years after his graduation in medicine Dr. Goff became a Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow, in which he filled successively every administrative office until in 1895 he was elected president, retiring in 1898 at the end of the statutory term of three years. He was for a long time representative of the Faculty on the Board of Management of Glasgow Royal Infirmary, and he afterwards became, and remained until his death, one of the managers of the Western Infirmary, in the affairs of which he was keenly interested. He retired from general practice sixteen years ago, but in consulting work and in his public duties he found ample occupation for his time and energy. From an early date he was interested in the Volunteer movement, joining in 1859, and retiring a few years ago with the rank of Honorary Colonel, R.A.M.C. (T.F.), and with the Volunteer decoration.

Dr. Goff's health began to fail about a year ago, and he died on 4th July in Bishopton at the residence of one of his sons. Four sons survive him, and of these two, Dr. John Goff, of Bothwell, his successor in practice, and Dr. Bruce Goff, of London, are members of their father's profession. Their colleagues throughout the West of Scotland participate with them in the loss which that profession has sustained.

JAMES WALLACE ANDERSON, M.D. St. And.,
Dennistoun.

We regret to announce the death of Dr. James W. Anderson, which took place on 6th July. Dr. Anderson, who was in his sixty-ninth year, and had been for some time retired from practice owing to failing health, was a native of Wigtownshire, where he received his early education. Having studied medicine at the University of Glasgow, where he came under the influence of Lister, for whom he acted as dresser in the Royal Infirmary, he became a licentiate of the Faculty of Physicians and Surgeons of Glasgow in 1870, and in 1891 he took the degree of M.D. of the University of St. Andrews. Settling in Dennistoun, he rapidly attained success, and he was for many years one of the most prominent among the practitioners of the district. He played an important part in connection with the measures which led to the compulsory notification of cerebro-spinal meningitis in Glasgow. At a time when it was not known to exist in the city, he was struck with the clinical features of certain cases occurring in his practice, and reported upon them to the medical officer of health, in conjunction with whom he subsequently carried out an investigation with regard to the occurrence and prevalence of the disease. The joint report presented by Dr. Chalmers and Dr. Anderson caused the adoption of compulsory notification by the local health authority.

Dr. Anderson is survived by his wife and by his son, Mr. J. Wallace Anderson, M.B., Ch.B., who succeeded to the practice on his father's retirement three years ago.

ALEXANDER DEWAR, M.B., C.M. Glasg.

We regret to announce the death of Mr. Alexander Dewar, which occurred on 25th June. Mr. Dewar studied medicine at the University of Glasgow, taking the degrees of M.B., C.M. in 1886. He never took up the practice of his profession, but became registrar for the Milton district of Glasgow, the duties of which position he discharged faithfully for many years.

JOHN PICKEN HOWIE MUIR, M.B., C.M. GLASG., ANNAN.

WE regret to announce the death of Mr. J. P. H. Muir, which occurred at Annan on 7th July. A native of the Glasgow district, Mr. Muir studied medicine at Glasgow University, where he took the degrees of M.B., C.M., in 1871. After having practised successfully in Moniaive, he removed some thirty years ago to Annan. His abilities speedily gained him recognition, and he became one of the best known practitioners of the town and of the surrounding district. He died at the ripe age of over seventy years.

CURRENT TOPICS.

Glasgow University: Graduation in Medicine.—A special graduation ceremony, arranged to facilitate the entrance of a number of medical students into the army, took place on 14th July in the Bute Hall, Glasgow University. Thirty-four graduates, including five lady students, received their degrees. The majority of the male graduands have applied for commissions in the Royal Army Medical Corps. At the close of the ceremony, Principal Sir Donald MacAlister, who presided, delivered to the graduates a brief address, in which he extolled the work of the Royal Army Medical Corps, and incited his hearers to emulation of their splendid example.

The following is a list of the degrees conferred:—

BACHELORS OF MEDICINE AND BACHELORS OF SURGERY (M.B., Ch.B.)

I. With Honours.

John Mandeville Macfie.
John Desmond Milligan.

II. With Commendation.

John Crawford Knox, B.Sc.
Robert Stuart Gibson, B.Sc.
Moses Wolffe Cantor, B.Sc.
John King Rennie, B.Sc.
William Frederick Shanks, B.Sc.
William Cunningham.
Robert Milne Lang.

III. Ordinary Degrees.

Dugald Stewart Campbell, M.A.
William Campbell.
John Gilchrist.
Colin Campbell Blair Gilmour, M.A.
Janet Fraser Henderson.
Helen Isobel Winifred Kerr.
James Alexander Leiper.
Reginald Lyon.
David M'Farlane.
Alexander Fraser M'Intosh.
George Maclean.
Peter Donald MacLean, M.A.
Malcolm Bonar Macleod.
David M'Neill.
Frederick William Morrison.
Mary Anderson Noble.
Alexander Scott.
James Tait Smith, M.A.

III. Ordinary Degrees (*continued*).

Isabel Stirling Thomson.
Adrian Johannes van der Spuy.
John Dalglish Watson.
Robert James Wilson.
Mary Ferguson Wood, M.A.
Alexander Young.

Royal Faculty of Physicians and Surgeons.—At the midsummer examinations for the licence in dental surgery of the Royal Faculty of Physicians and Surgeons of Glasgow the following candidates passed the final examination, and were admitted licentiates in dental surgery:—Charles William Burkheisen, Cape Town, South Africa; Thomas Walter Vose Davies, Blackpool; Thomas Hall James Douglas, Scotstoun; Robert Forest Hay, Glasgow; James Finlayson M'Gregor, Glasgow; Alexander Andrew M'Mullan, Blairhill; John Patrick O'Brien, Glasgow; Robert Young Richmond, Paisley; John Brodie Shearer, Condorrat.

Royal College of Surgeons of Edinburgh.—At a meeting of the College, held on 22nd July, the following gentlemen, having passed the requisite examinations between 22nd and 25th March, 1915, were admitted Fellows:—

Cecil Burnham, M.B., Ch.B.Edin.; Charles Gibson, M.R.C.S. Eng., L.R.C.P.Lond., M.B., B.S.Univ.Lond.; Evan Greene, M.D., C.M., M'Gill Univ., Montreal; Charles Henry Hayton, L.R.C.S.E. (Triple Qualification); Satya Sakha Maitra, L.M. & S.Calcutta, L.R.C.S.E.; Abraham Zadok Philips, M.D.Edin.; James Coubro Potter, M.D.Edin., L.R.C.S.E. (Triple Qualification); Vinayak Laxwan Sathe, L.M. & S.Bombay, L.R.C.S.E.; and William Douglas Yuille, L.R.C.S.E. (Triple Qualification).

The Triple Qualification.—At the examinations of the Board of the Royal College of Physicians of Edinburgh, Royal College of Surgeons of Edinburgh, and Royal Faculty of Physicians and Surgeons of Glasgow, concluded at Edinburgh on 16th July, the following candidates, having passed the final examination, were admitted L.R.C.P.E., L.R.C.S.E., and L.R.F.P.S.G.:—

James Leith Hendry, Aberdeen; William Ainsley, Berwick-on-Tweed; William David Bathgate, New Zealand; James

Bannerman, Elgin; William Alfred Backenstoe, M.D., Pennsylvania; Matthew M'Lintock Bainbridge, Roxburghshire; Alfred Cresswell Taylor, Seaton Sluice; William James Forsyth Craig, Birmingham; Harry Alexander Leonard Guthrie, Leith; Percy Chisholm, New Zealand; Charles Evelyn Meryon, Hampshire; John Murray Hiddleston, Dumfries; Arthur Macafee Burge, New South Wales.

At the examinations of the same Board, concluded in Glasgow on 24th July, the following candidates, having passed the final examination, were admitted L.R.C.P.E., L.R.C.S.E., and L.R.F.P.S.G.:—

James M'Farlane, Paisley; Charles Read, Glasgow; James MacRae, Castletown, Caithness; David Andrew Imrie, Glasgow; John Crawford, Paisley; William M'Alpine, Wishaw; John William Irvine, Shetland; Marion Columbus Pruitt, Alabama, U.S.A.; Chembil Vittil Appunnie Menon, India; James Percival Denny, Georgetown, British Guiana; Henry Valentine Fitzgerald, County Antrim, Ireland; Gulabrai Teckchand Makhijani, India; Purnshottam Mahaniroj Saptarshi, India; Nathaniel Benjamin Morris, India; Percy Milnes, Brighouse; Clement Montague Bradley, Blackburn; and George Boyle Hanna, Antrim.

APPOINTMENTS.—The following appointments have recently been made:—

A. W. Eadie, M.B., Ch.B.Glasg. (1907), to be Deputy Medical Officer of Health to the Colne Town Council.

Daisy A. M. Gale, M.B., Ch.B.Glasg. (1909), to be temporary Assistant Tuberculosis Officer for Glasgow, *vice* J. A. Wilson, M.B., on military service.

A. G. Hay, M.D.Glasg. (M.B., 1892), to be Medical Officer for the southern part of the parish of New Kilpatrick.

W. Howat, M.B., Ch.B.Glasg. (1909), to be Assistant Medical Officer to the Bethnal Green Parish Infirmary.

J. Johnson, M.B., C.M.Glasg. (1892), to be Certifying Factory Surgeon for the Birtley District, co. Durham.

D. C. Laird, M.B., C.M.Glasg. (1892), to be Medical Officer for the northern part of the parish of New Kilpatrick.

E. Mackenzie, M.D.Glasg., (M.B., 1884), to be Medical Officer to the Children's Homes of the Cheadle Union.

Royal Navy (28th June): To be temporary Surgeon-General in His Majesty's Fleet—Sir W. Macewen, M.D., F.R.S.

Royal Army Medical Corps (21st June): To be temporary Major—A. Johnston, M.D.Glasg. (M.B., 1883). To be temporary Lieutenants—M. MacNicol, M.D. Glasg. (M.B., 1893); J. M. Anderson, M.D.Glasg. (M.B., 1906); T. Kirkwood, M.B., C.M. Glasg. (1892); D. M'Intyre, M.B., Ch.B.Glasg. (1909); J. L. Gregory, M.B., Ch.B.Glasg. (1913); W. H. Brown, M.B., Ch.B. Glasg. (1914); M. Manson, M.B., Ch.B.Glasg. (1911); G. K. Allan, M.B., Ch.B.Glasg. (1915); D. Craig, M.D.Glasg. (M.B., 1887); D. W. Torrance, M.B., C.M.Glasg. (1883).

23rd June: To be temporary Major—temporary Lieutenant T. Kay, M.B., C.M.Glasg. (1893), Major, Royal Army Medical Corps (T.F.). To be temporary Lieutenants—F. A. Kerr, M.B., Ch.B.Glasg. (1912); A. B. Aitken, M.B., Ch.B.Glasg. (1905), F.R.C.S.; J. J. Gibb, M.B., Ch.B.Glasg. (1912); H. M. Donaldson, M.B., Ch.B.Glasg. (1905); J. Wright, M.B., C.M.Glasg. (1888); A. Stevenson, M.D.Glasg. (M.B., 1900); J. A. Wilson, M.B., Ch.B.Glasg. (1909); L. L. Fyfe, M.B., Ch.B.Glasg. (1911).

5th July: To be temporary Captain—temporary Lieutenant J. G. Duncanson, M.B., C.M.Glasg. (1892).

8th July: To be temporary Lieutenant—A. F. Bell, M.B., Ch.B.Glasg. (1905).

9th July: To be temporary Lieutenants—J. Pearson, M.B., Ch.B.Glasg. (1905); D. C. Laird, M.B., C.M.Glasg. (1892).

10th July: Captain C. M. Drew, M.B., Ch.B.Glasg. (1904), from the seconded list is restored to the establishment, dated 1st June, 1915. The undermentioned to be temporary Lieutenants:—Dated 10th June, 1915: Second Lieutenant R. T. Grant, M.B., Ch.B.Glasg. (1915), from Reserve of Officers; A. F. Ross, M.B., Ch.B.Glasg. (1915); P. L. L. Craig, M.B., C.M. Glasg. (1896). Dated 14th June, 1915: J. E. Paterson, M.B., Ch.B.Glasg. (1911); R. B. F. M'Kail, M.B., Ch.B.Glasg. (1909); T. A. O'Brien, M.B., Ch.B.Glasg. (1915); R. Rennie, M.B., Ch.B. Glasg. (1900). Dated 18th June, 1915: J. M'C. Lang, M.B., Ch.B.Glasg. (1911).

13th July: To be temporary Lieutenants—A. D. Crawford, M.B., C.M.Glasg. (1886); J. D. Hart, M.B., Ch.B.Glasg. (1905); W. D. Murray, M.B., C.M.Glasg. (1889); C. K. M'Kerrow, M.B.

Cantab. (Ayr); W. Macleod, M.B., Ch.B.Glasg. (1905); C. Averill, M.B., Ch.B.Glasg. (1911).

Territorial Force (26th June): 1st Lowland Field Ambulance—W. B. Stewart, M.B., Ch.B.Glasg. (1915), to be Lieutenant. 3rd Lowland Field Ambulance—N. Scott, M.B., Ch.B.Glasg. (1908), F.R.C.S.E., to be Lieutenant.

10th July: 1st Home Counties Field Ambulance—G. Hislop, M.B., Ch.B.Glasg. (1913), to be Lieutenant, dated 7th June, 1915. West Lancashire Casualty Clearing Station—Lieutenant W. N. West-Watson, M.D.Glasg. (M.B., 1903), to be temporary Captain, dated 17th June, 1915.

Scottish Command Orders (27th June): The following gentlemen have been appointed Civil Medical Practitioners at the places detailed:—J. R. F. Cullen, M.B., C.M.Glasg. (1886), Alexandria; J. W. Anderson, M.B., Ch.B.Glasg. (1911), Dennistoun; W. S. Paterson, M.B., C.M.Glasg. (1896), Partickhill; G. Dickson, M.D.Glasg. (M.B., 1881), Elgin; A. Ross, L.R.C.P. & S.E., L.R.F.P.S. (1897), Glasgow; G. N. Turner, M.B., C.M.Glasg. (1892), Glasgow; J. W. Stephen, M.B.Aberd., Beith; D. G. Dingwall, L.R.C.P. & S.E., L.R.F.P.S. (1902), Alloa; R. C. Blyth, L.R.C.P. & S.E., L.R.F.P.S. (1903), Old Kilpatrick; J. Scott, M.B., Ch.B.Glasg. (1900), F.R.F.P.S., Glasgow; J. Muir, M.B., Ch.B.Glasg. (1907), Bridgeton; D. W. Currie, M.D.Glasg. (M.B., 1876), Tillicoultry; D. P. Gage, L.R.C.P.E., L.R.F.P.S. (1884), Kilwinning; and H. M. Roberts, L.R.C.P. & S.E., L.R.F.P.S. (1900), Stevenston.

UNIVERSITY MEDICAL STUDENTS AND WAR SERVICE.—A meeting of the medical students of Glasgow University was held in the University on 28th June for the purpose of obtaining official guidance as to their course of action in view of the call for national service in relation to the war. The meeting was convened at the request of a number of the students, who felt that their position in regard to the war was not very clear owing to the conflicting advice which had been given. Mr. J. Crawford Knox, convener of the Medical Committee, Students' Representative Council, who presided, stated that their object had already been attained. The following statement from the

Director-General of the Army Medical Service had been received through Principal Sir Donald MacAlister:—

"Medical students in their fourth and fifth years must remain and obtain their qualifications. Medical students of the first, second, and third years are, so far as the War Office is concerned, free to offer themselves for combatant or other service."

The chairman stated that that was an absolutely definite statement. Though there was much talk of the future scarcity of medical men, it must be kept in mind that there was a very urgent present shortage of men to take combatant commissions. It was therefore a personal question with the junior medicals whether they remained or elected to serve in other capacities.

MEDICAL STUDENTS IN THE ARMY.—The following is contained in the Scottish Command Orders of 3rd July:—

Referring to the War Office letter, dated 28th November, it has been decided that medical students holding combatant commissions in the Territorial Force are to retain them, and will not be allowed to resume their medical studies; and it has also been decided that medical students not holding commissions, who are serving in combatant units of the Regular Army or Territorial Force, and are in their fifth or final year of study, may, provided they are willing and their commanding officers have no objection, be discharged for the purpose of resuming their medical studies.

WAR HONOURS FOR GLASGOW GRADUATES.—In the *London Gazette* of 23rd June it was announced that His Majesty the King had been pleased, on the occasion of his birthday, to admit to a Companionship of the Order of the Bath Colonel R. J. Geddes, D.S.O., M.B. Colonel Geddes, who was mentioned in Sir John French's first despatch, and again in his despatch of 31st May, is a graduate of Glasgow University, where he took the degrees of M.B., C.M., in 1882, and of which he also holds the Arts degree. Ten years ago he was medical officer in charge of troops in Maryhill. His D.S.O. was the reward of distinguished service in South Africa, and he at present holds the position of D.D.M.S. on the staff of the Second Army Corps.

On the same occasion the D.S.O. was conferred upon Captain R. Gale, M.B., R.A.M.C. Captain Gale was mentioned in Sir John French's despatch of 31st May. He is M.B., Ch.B. of Glasgow University, where he studied, and where he graduated in 1909. Before the war he was attached to the Public Health Department at Cairo.

The *London Gazette* of 3rd July announces that His Majesty has been pleased to confer the Military Cross on Temporary Lieutenant John Hart M'Nicol, M.B., R.A.M.C. A student of Glasgow University, Lieutenant M'Nicol took the degrees of M.B., Ch.B., in 1909, and was in practice in Dennistoun before the war. The actions which brought him the Military Cross are thus narrated:—"On 24th and 25th May, 1915, at Ypres, with untiring energy and gallantry he attended to wounded men under heavy rifle and shell fire, saving the lives of many men. On the night of 25th May he searched a wood near Bellegarde for the wounded, attended to them, and had them brought in. This wood was close up to the German trenches. He has shown the greatest courage in attending to the wounded in action."

In addition to those above referred to, several Glasgow graduates were mentioned in the despatch of 31st May. They are:—Surgeon-General R. Porter, M.B., C.M. Glasg. (1879), on the General Headquarters Staff; Captain S. Martyn, M.B., C.M. Glasg. (1897), R.A.M.C. (T.F.); and Lieutenant T. W. Wylie, M.B., Ch.B. Glasg. (1914), R.A.M.C. (T.F.).

The Military Cross was also awarded to Lieutenant T. B. Erskine, 4th Battalion Princess Louise's Argyll and Sutherland Highlanders, attached 1st Battalion the Gordon Highlanders, for conspicuous gallantry and ability. "Between 12th and 20th May, 1915, he obtained definite information of the enemy's dispositions near Hill 60 by personal reconnaissance by day and night, and, after locating the enemy's nearest occupied trench from a distance of 10 to 20 yards, he checked their activities by incessantly bombing their working parties. His work was marked by equal boldness and judgment. He has also shown since conspicuous energy and skill in the construction of defences in Hooge village."

Prior to the outbreak of war Lieutenant Erskine was a medical student of Glasgow University. His death—for he was killed in action in France on 20th July—deprives the Army of a most promising and gallant officer.

Glasgow Medical Casualties.—During last month there have been three casualties among medical graduates of Glasgow University. Accompanying the contingent of wounded which arrived at Stobhill on 3rd July was Lieutenant A. Jamieson, M.B., R.A.M.C., invalided home as the result of the long continued strain of work in one of the hospitals at Havre.

In the list of officers wounded at the Dardanelles, published on 12th July, occurs the name of Captain Eric D. Gairdner, M.B., R.A.M.C., attached Royal Scots Fusiliers, 5th Battalion (T.F.). Captain Gairdner, who took his degree in 1902, is a son of the late Sir William Gairdner, and has been for ten years in practice in Ayr, where he holds the position of Surgeon to Ayr County Hospital, and is widely known as one of the prominent citizens of the town. He received his captaincy on 15th July, 1906.

It was intimated on 21st July that Lieutenant C. S. P. Black, M.B., had been wounded at the Dardanelles. Lieutenant Black has been a member of the Territorial Force since his student days in Glasgow University, where he took the degrees of M.B., Ch.B., in 1910. He served for some time after graduation as assistant medical officer at Stobhill Hospital, and as assistant physician to Glasgow Royal Asylum. This is not his first experience of war, for he was on the medical staff of the unit sent out to Serbia in 1912 by the Scottish Branch of the Red Cross Society, when the Royal Order of St. Sava was bestowed upon him for his services. He received a commission as a combatant officer in the 6th H.L.I. in September, 1914.

Captain C. C. Fitzgerald, R.A.M.C., attached to the 7th Lancashire Fusiliers, and reported wounded at the end of June, is an old student of Glasgow University and of Anderson's College, who after taking the triple qualification in 1906, settled in Salford, where before the war he was assistant medical officer of health. He was well known as an athlete, playing three-quarter back for the University from 1898 to 1906. He also played thrice in the inter-city match, and in 1902 he played for Ireland against England.

Second Lieutenant John Stewart, of the 5th Argyll and Sutherland Highlanders, who was reported wounded in the action of 12th July at the Dardanelles, has since, we regret to learn, died of his wounds. Lieutenant Stewart, who was only 20 years of age, was a medical student, and was a son of Dr. William Stewart, of Gourock, to whom the sympathies of the profession will be extended in his loss.

Lieutenant R. M. S. Boyd, 1/6th H.L.I., at first reported wounded and missing after the action of 12th July at the Dardanelles, in a later report is stated to have been killed in action. Lieutenant Boyd was a medical student of Glasgow University, and was in his final year. He had been connected with the battalion for about three years, previous to which he was in the University Officers' Training Corps, and he was mobilised with the other officers of the battalion at the outbreak of war. One of his brothers is an officer in the 6th H.L.I., and another in the 12th Scottish Rifles.

ENTERIC FEVER IN THE EXPEDITIONARY FORCE.—In reply to a question by Mr. Chancellor, Mr. Tennant, Under-Secretary of State for War, stated in the House of Commons on 1st July that up to 22nd May there had been in the Expeditionary Force in France 827 cases of enteric fever, with 128 deaths. Of these cases 508 occurred among the uninoculated, and of these 106 died. Of the remaining 319 cases which occurred among the inoculated 22 were fatal. The House would be interested to know that the ratio of attacks was fourteen times and of deaths forty-two times greater among the uninoculated men.

A subsequent question regarding the number of cases of, and deaths from, paratyphoid fever, and their ratios amongst those who had and had not been inoculated against enteric fever, elicited the answer that in the Expeditionary Force up to 22nd May there had been 297 cases of paratyphoid fever, with 10 deaths. There were no figures available to show in how many of these cases there had been inoculation against enteric fever.

MEDICAL WAR SERVICE: SUGGESTED ARRANGEMENTS FOR GLASGOW.—The Council of the Glasgow and West of Scotland

Branch of the British Medical Association has had under consideration, in conjunction with the City Divisional War Emergency Committees, the question of the organisation of the general medical practice in Glasgow to meet the war emergency. A sub-committee has prepared a report which, along with an explanatory letter, has been circulated among medical practitioners. The letter, which is signed by Dr. D. J. Mackintosh, president, and Dr. J. Wishart Kerr, honorary interim secretary, expresses the gratification of the Council at the satisfactory response which had been made by the members of the profession in the branch to the demands for medical men to serve with the forces, and of the manner in which colleagues have undertaken the work of the practices of the doctors who have gone on service. The large and increasing number of men who have enlisted in the Navy and Army makes it necessary that the services of additional doctors should be placed at the disposal of the authorities. In order to meet these requirements the Council, acting in association with the Divisional War Emergency Committees, had had under careful consideration methods to be applied in order to relieve additional men for service. A sub-committee had drawn up a scheme of co-ordination, and the Council and War Emergency Committees believe the scheme is the only practicable method of economising medical time, and so making it possible for additional doctors to be relieved for service. The Council and War Emergency Committees have approved generally of the scheme, and have authorised its introduction in the Townhead area of the city, where the need for co-ordination is already urgent. The necessity for medical men for service with the forces is imperative, and the arrangements now suggested will make it possible for additional doctors to volunteer. The Council accordingly urge upon every practitioner to consider whether it is possible for him to offer for whole-time service, and if he cannot, to co-operate in the scheme. The objects of the scheme can, of course, only be attained if it receives the whole-hearted support of the practitioners in the city.

In the report the sub-committee at the outset express their appreciation of the valuable services rendered to them in connection with the scheme by Mr. William Jones, clerk to the Burgh Insurance Committee, to whom they had been indebted for the preparation of the large amount of data as to the distribution of the population and medical practice throughout the city. Proceeding, the report states that over fifty practitioners whose names appear on the panel list for the area are already on service, and that they were responsible for the treatment of over 44,000 insured persons. The work of these practices was being performed by forty-seven other doctors acting as deputies. Taking the lists of absentees and deputies together, forty-seven practitioners were responsible for a total insured population of something like 94,000 persons, or an average of 2,000 insured persons per doctor, to which of course there must be added a considerable volume of private practice. The only apparent direction in which economy of medical time can be effected is by concentrating the work in districts. To attain this end it is proposed to establish district centres. The number of insured persons on panel practitioners' lists in the city is approximately 350,000, out of a total population of over 1,030,000, the ratio of insured to the whole population being approximately one-third.

The data available for insurance purposes now afford, probably for the first time in history, a fairly reliable means of estimating the probable quota of population for the treatment of which an individual practitioner is, on the average, responsible. The sub-committee found that out of the total of 372 practitioners on the panel list 345 could be regarded as having their practices wholly or mainly within the city area. There are also sixty-three general practitioners not upon the panel, giving a total of 408. Dividing this latter number into the total population, there is shown an average quota of population to each practitioner in normal times of 2,530. Of this quota one-third (860) represents the proportion of insured. Assuming a compulsory withdrawal for service with His Majesty's Forces, the sub-committee estimated, after a careful scrutiny of the lists of general practitioners (panel and non-panel), that as nearly as may be the services of one-half (including those already on service) might be requisitioned. The number remaining at home on the committee's estimate was 208. Applying this minimum number of doctors to the normal population, the average quota of insured persons would be increased from 860 to 1,670, and of the whole population (including insured) from

2,530 to 4,963. These figures are to be regarded as extremes. On the one hand, the number of practitioners enlisting may not reach the total estimated by the sub-committee; on the other hand, the figures for population (insured and non-insured) take no cognisance of the very large number of persons already enlisted.

On the subject of the staffing of the proposed centres the sub-committee state that, generally speaking, each area will be able to staff medically its own centre, but where any shortage arises the sub-committee does not anticipate any difficulty in drafting doctors from other areas more favourably situated.

In connection with insurance practices the committee state that they understand that the insurance authorities will be prepared to grant all reasonable facilities for attaining the objects of the scheme, and on this assumption the sub-committee are of opinion that it is not desirable an insured person should be attached definitely to the centre serving generally the area in which he may be resident, but that within reasonable limits treatment should be obtained at any centre on presentation of a medical card. The sub-committee find greater difficulty in dealing with the question of private practice, for while the practitioners attending the centre may be able to overtake some part of it there, the natural conditions of such practice render it probable that each practitioner will desire to continue his present customs.

The committee also submit proposed financial arrangements, and they recommend that steps be taken to bring the scheme into operation. For premises for the proposed centres the committee have in view dispensaries of the Corporation, the infirmaries, and the premises of political and other associations should need arise. The report is signed by Dr. Miller Semple, Dr. J. Wishart Kerr, and Dr. J. R. Drever.

The Scottish Medical Service Emergency Committee have also recently issued a circular which deals with the situation in Scotland generally, and of which the following is an abstract:—

To the medical profession of this country there has come a great opportunity. Theirs is to be the distinction of rendering services to the Empire greater than those which any of the other peaceful professions can offer. Scotland has provided her full proportion of the medical men required for Army work up to the present date. But a fresh call has gone forth for more volunteers to meet the needs of the new armies and to make good the losses of those now at the front. Various organisations, in particular the British Medical Association through its branches and divisions, have taken steps to bring this fresh appeal to the notice of the profession in Scotland, and an encouraging response has begun to be made. It is, however, the unanimous opinion of those who are in touch with the War Office on the one hand, and with the working members of the profession on the other, that a single central body should in Scotland undertake the general direction of the arrangements to supply the needs of the nation. After conference and negotiation with the various professional executives it has been agreed to entrust this responsible duty to the Scottish Medical Service Emergency Committee, which was constituted in August, 1914, for the purpose of dealing with the problems that called for solution at the beginning of the war.

The attention of the committee will in the meantime be specially directed to offers for whole-time service. This is the more pressing problem. The number of men for whole-time service which it is hoped to raise in Scotland is 400. The committee believe that arrangements regarding part-time service will be best made, and where necessary readjusted, by those possessing a close knowledge of the circumstances of each individual area. Offers for whole-time service may be divided into two classes:—(1) Men under 40, whose services will be accepted for a period of twelve months, and who will be liable for service at home or abroad. (2) Men over 40, who may offer their services for a period of six or twelve months. These will not be sent to France, but will be employed either in this country or in such stations as Egypt, Malta, and Gibraltar. If they desire it and have been found serviceable they may be re-engaged at the end of six months. Men may enrol their names with the Emergency Committee, declaring their readiness to join after a certain date on receiving thirty-six hours' notice from the War Office that their services are forthwith required.

In directing the work of enabling men to apply for these appointments the Emergency Committee, as already indicated, is to be the central body. It is proposed that the area of each division of the British Medical Association shall be the local administrative unit, looking for co-ordination, and help if desired, to the Emergency Committee. The area of each division should be in charge of a War Committee, the formation of which should, if necessary, be carried out by the Executive of the division calling a meeting of the members of the profession in the area for the purpose. With regard to the dates by which the fresh drafts will be wanted, the Emergency Committee have arranged with the War Office to be informed upon this particular. To the total of 400 men referred to there is reason to believe that the graduates and licentiates of July will contribute about 100. Of the remaining 300 some will be expected to be ready for duty, if required, in August; an additional number will be due in September; and a further contingent in October. In advising War Committees of the incidence of these claims upon their respective areas, the Emergency Committee will make successive calls upon them in order that disorganisation of civil practice may, as far as possible, be prevented and time allowed for devising adjustments to meet the new conditions. These calls, which will be three in number, will be preceded by a preliminary notice.

It will be the duty of War Committees to assure themselves that proper arrangements can be made for carrying on the practices of those who are to go on service, and the Emergency Committee will look to War Committees to see that names are not sent in until this is ascertained. It is clearly undesirable in the public interest that any area should be denuded of medical practitioners. In populous centres special schemes for carrying on civil work will have to be devised, or bureaux established as in Dundee and Aberdeen. Such schemes may be specially organised for the purpose, or it may be found convenient to employ the organisation of existing bodies. In any case, the schemes should be capable of dealing, where necessary, with both private and insurance practices. While the medical man who is with the forces has the honour of serving his country directly, he may at the same time imperil the position which he has established after many years of hard work, or in which he has sunk his capital. The man who remains to do the necessary work at home has to take on a large addition to work which may be already considerable, and he has to do this without the prospect of its being of any lasting benefit to him, for it is the essence of these arrangements that they are only "for the period of the war." Bearing these considerations in mind the committee commends the following arrangements for three classes of practice:—

Class I. Town practice.—Large towns where the question of mileage is not a very important consideration. Here it is suggested that an equal division of the remuneration should be agreed upon, this to apply both to private and insurance practice. Where a bureau is in operation the plan should be to deduct the expenses of working from the receipts and divide the balance equally.

Class II. Town and country practice.—Towns with a considerable population but with a large amount of country work, necessarily involving the question of travelling expenses. It may be possible to ascertain these with more or less exactness, but as a general rule probably a division of all remuneration on the basis of three-eighths to the absentee and five-eighths to the man who is doing all the work and paying all the expenses is the nearest to equity.

Class III. Country practice.—Smaller centres or single practice areas where the question of travelling expenses and consumption of time becomes still more important. In such three-fourths at least should be allotted to the man who is doing the work.

The committee are confident that no medical man remaining in civil practice at home will endeavour to secure the transfer to himself of patients of a practitioner absent on war service. Alike for private and insurance work they feel sure that this rule will hold.

HIGHLANDS AND ISLANDS MEDICAL SERVICE.—There was issued on 7th July the first report of the Highlands and Islands Medical Service Board, which covers the period ended 31st December last. The signatures attached to it are those of John A. Dewar, chairman; Susan Gilmour, Donald MacAlister, W. Leslie Mackenzie, John Macpherson, John C. M'Vail, J. L. Robertson, Norman Walker. Details are given at the outset of the circumstances that led to the constitution of the Board, and the procedure followed since work began in November, 1913, is set out at length, together with full information as to the localities visited. Pending the preparation and approval of schemes of a more permanent character, the sanction of the Secretary for Scotland and the Treasury was obtained to certain schemes of a temporary character, and the nature of (1) the mileage scheme and (2) the special emergency scheme is explained. Under the latter scheme the Board have, during 1914, kept or assisted in keeping medical services in the districts of Harris, Latheron, Assynt, Lairg, and Kinloch Rannoch. They have given guarantees in regard to salary to enable doctors to be got for Jura, Lochcarron, Rousay, Whalsay, North Ronaldshay, and Northmavine. They have kept or assisted in keeping a nursing service in Fair Isle, St. Kilda, Foula, Skerries, Eriskay, Barra, Benbecula, Harris, Kenmore, Bernera, Lochs, Kiltarlity, North and West Rannoch, Bressay, and Lerwick, and they have promised help for nursing services in Skye, South Uist, Croy, Petty, and Ardersier. Several similar cases are at present under consideration.

The Board deal at some length with the circumstances of the island of St. Kilda. A fully qualified nurse, with an ample supply of medicine and dressings, was sent out on the 18th May, 1914. Two days after the arrival of the steamer an epidemic of influenza, sometimes referred to as the "stranger's cold," broke out and affected practically all the inhabitants. The nurse's report on the situation thus produced is published, and also a letter describing the results of her work in the summer of 1914. She was relieved at the end of August, and since then there has been no regular communication with the island, but communications from her successor, sent by trawlers and other passing vessels, have reached the Board from time to time, and they have reason to believe that the nurse is doing excellent work, under what must be circumstances of the most trying description. A relief nurse will be sent to the island as soon as communications are re-established next year. The special emergency scheme, under which the foregoing arrangements have been made, will be discontinued after existing obligations are disposed of, and after the objects to which they refer are worked into the general organisation of the medical and nursing services in the Highlands and Islands.

Medical service in the Highlands and Islands has been gravely affected by the war. Many of the practitioners in the Board's area held commissions in the Territorial Force, and were called out when war was declared, while others have volunteered in answer to the appeal of the War Office for more doctors. In regions where medical men are so sparsely distributed as they are in so many parts of the Highlands, the inconveniences caused by any shortage are felt very acutely, and the Board has, by financial and other means, done its best to assist in procuring substitutes for those who are serving their country. It is almost impossible to find suitable candidates to fill such definite vacancies as occur in the natural course of events. Localities far more populous than most of those in the Board's area are finding the same difficulties, and the medical men who for one or other reason are unable to offer their services to the War Office naturally prefer to accept these more easily worked practices in co-operation with the Scottish Medical Service Emergency Committee. The Board hope to be able to arrange an intermittent medical service in those areas where it has not been possible to provide a regularly resident doctor.

PROPOSED CARNEGIE FELLOWSHIPS FOR RESEARCH.—At a meeting of the Glasgow University Court, held on 30th June, a report was submitted from a committee of the Court recommending that the establishment of twenty research scholarships of £250 a year each should be suggested to the Carnegie Trust.

Professor Graham Kerr, who presented the report, said that its main point was to accentuate the fact that in the Scottish universities there was nothing quite corresponding with the system of fellowships which existed in the English universities —a system whereby a student of exceptional powers was enabled to devote himself for a period of six or seven years to research without being worried by immediate financial troubles. He was given a small stipend, which lasted during the six or seven years, and in that time he could settle down to his research work and show what his abilities were. In Scotland the best an exceptional student could look for was one of the ordinary Carnegie fellowships or scholarships—that was the payment of £100 or £150, which might be repeated if the results obtained seemed to deserve it. Under these conditions the most able type of student could not settle down to research work. That was a lamentable thing for the advancement of knowledge, and it was also lamentable that the poor students in Scotland should be subjected to a handicap so very much greater than their comrades in the south. The committee recommended that the Court should suggest to the Carnegie Trust the making of, say, twenty fellowships of £250 a year each. They also recommended that nothing should be said about allocating these fellowships as between individual universities or as between various departments of knowledge, because they felt that in particular places or particular subjects they were liable to get particularly inspiring teachers or workers who would start a school of investigation in some particular subject, and wherever that happened the Carnegie Trust should be in the position to give every possible encouragement. He moved the adoption of the report.

Sir David M'Vail seconded.

Mr. John Hutchison, LL.D., while agreeing with all that had been said about the stimulating effect of the Carnegie Trust on learning and science in Scotland, thought the report was too much disposed to distinguish between the holders of these fellowships and all other students and graduates. A slight modification of existing arrangements in the direction of extension would have been better, and would have been almost certain to get the entire acquiescence of the Trust in the undertaking. In the last clause of the report it was stated that £100,000—that was £5,000 a year—was wanted from the surplus fund. In days like the present, with the rise of prices more or less all round, he thought it would have been a very fair question for the Court, before considering about using up another £100,000 of the Trust funds, whether some report might not have been made to the Trust to consider the case of the student whose help from the Trust had been seriously reduced.

Mr. Wm. Lorimer, LL.D., said that the more the Carnegie funds were utilised for research and high forms of work the more worthily they would be used.

Professor Muir pointed out that there was a great disproportion between the proposed number of fellowships to be established and the already existing number of fellowships both in Cambridge and Oxford.

The Principal said that at present there was no fixed number of fellowships. The number depended on the number of qualified candidates. No person was appointed by the nomination of anyone. It was on the recommendations of three referees that the appointments were made. There was a very important system under which grants were made by way of supplement to fellowships if it appeared that the particular work to be done involved expenditure for instruments or material. Grants had been made when it was necessary for a Fellow to go abroad. Very great elasticity and generosity had been shown in meeting all cases of that kind by additional grants. In Oxford and Cambridge the tendency had been to shorten the tenure and to diminish the number of purely research fellowships.

The Rev. Dr. Smith said the proposal in the report was that the fellowships should be tenable for three years and renewable for a further period.

Professor Graham Kerr, replying on the discussion, said the question of fees was not remitted to the committee. He did not think it was the idea that the Carnegie Trust should be compelled to fill the twenty fellowships necessarily all at one time. In reply to a question by Mr. Robert Graham, Professor Kerr said he was afraid they had to confess that the English universities were centres of investigation and for the advancement of learning in a way that the Scottish universities could not claim to be. The fact that there were great centres of investigation in England was to a large extent due to the fellowships.

The report was adopted, and it was agreed to forward it to the Carnegie Trust.

GLASGOW DENTAL HOSPITAL: ANNUAL REPORT.—The annual report of the Incorporated Glasgow Dental Hospital was submitted to the members at a meeting held on 29th June, Lord Provost Dunlop in the chair. The report, which was presented by the secretary, Mr. D. M. Alexander, stated that notwithstanding the depressing influence which the war might have been expected to have upon the statistics, these continued to show progress in the hospital. The number of patients treated during the year was 17,260, as against 16,078 in 1913. The experiment of ear-marking the students' fees for the use of a school committee in promoting the efficiency and equipment of the school had been brought into practice during the year. For this purpose the students' fees payable for the summer session of 1914 were set aside, amounting to £511, 7s., and out of that sum the committee had already made grants by way of remunerating the staff to the extent of an annual payment of £10 each. They had also expended various sums on the increased equipment of the school. The whole expenditure of the School Committee was submitted to and under the control of the Board, who proposed to continue the experiment until they had a fair opportunity of ascertaining how far the work of the hospital and school could be carried on independently of the financial support hitherto afforded by the students' fees. The treasurer's books for the year closed with a balance in bank on deposit receipt and current account of £1,016, 0s. 3d., which was very satisfactory.

The chairman, in moving the adoption of the report, congratulated the members on the good work done during the year. There was no doubt the hospital was fulfilling a useful function in the city, and now that people were beginning to realise the part played by the teeth in the matter of health, they realised more and more the advantages to be derived from a hospital such as theirs. It was a good school for educating young men in the profession, and it was pleasing to know that, despite the war, there was a slight increase in the number of students.

Mr. James M'Farlane seconded, and the report was approved.

Literary Intelligence.—Three new editions are about to be published by Messrs. J. & A. Churchill. Sixth Edition of *A Text-Book of Pharmacology and Therapeutics*, by A. R. Cushny, F.R.S., Professor of Pharmacology, University of London. Several new chapters have been added upon recently introduced remedies, and the whole text has been revised. Fourth edition of *A Manual of Midwifery*, by T. W. Eden, M.D., Obstetric Physician to Charing Cross Hospital. A new feature has been introduced by the insertion of coloured plates. Fourth edition of *Elementary Hygiene and Sanitation, with Special Reference to the Tropics*, by W. T. Prout, M.B., C.M.G., Medical Adviser to the Colonial Office.

NEW PREPARATIONS, &c.

From The Hoffmann-La Roche Chemical Works, Limited.

A pamphlet, entitled "Notes on the Technique of Effective Bromide Therapy in Epilepsy," by Dr. A. Ulrich, Medical Superintendent of the Swiss Institute for Epileptics in Zurich, translated by F. C. Barlow, L.R.C.S., L.R.C.P.Edin.

It is an interesting little pamphlet which emphasises the need for consistent and uninterrupted exhibition of bromide for many years, the need for the restriction of sodium chloride in the diet to a safe minimum, and an appreciation of "Sedobrol" as an aid in the treatment. Sedobrol "Roche" is supplied in small square tablets containing 17 grains of sodium bromide in combination with fat and spicy extractives of vegetable proteins. One or two tablets dissolved in a cup of hot water provide an appetising bouillon which forms a palatable salt-poor article of diet for the treatment of epileptic patients. Pamphlet and samples will be sent free to any medical man on request.

REVIEWS.

Quain's Elements of Anatomy. Eleventh Edition. Editors—Sir Edward Albert Schäfer, LL.D., M.D., Johnson Symington, M.D., Thomas Hastie Bryce, M.A., M.D. Vol. IV, Part I: Osteology and Arthrology. By T. H. Bryce. London: Longmans, Green & Co.

Osteology is a part of anatomical study apt to prove particularly irksome to the student, and it is at least doubtful if its presentation in this volume will form an exception to the rule. Dr. Bryce, however, if his descriptive method is somewhat conventional, has at least been very thorough, and there is little of importance lacking in these pages on the bones. The descriptions are clear, so far as possible concise, the illustrations are good if not superlatively excellent, and the references numerous, if it be possible, even complete.

While of necessity most of the space available is taken up with descriptions of adult bones, comparative anatomy is by no means neglected; and the development of the bones is considered very carefully, and is well illustrated, both from the fœtal skeleton and from x-ray plates. There are, however, some improvements which might be suggested, particularly in those plates illustrating muscular attachment, for, after all, osteology cannot stand alone as a study, and for any adequate understanding of bones a grasp of their relations to muscles is essential.

To some extent, one may say that the same correlation is lacking in the section on arthrology, but here one is more occupied in thinking of the really very beautiful illustrations of joints drawn by Mr. A. K. Maxwell. Of course, the descriptions of the joints and their movements are excellent, and again there are numerous references to the work of various arthrologists; but one cannot recall having anywhere seen more accurate and at the same time artistic illustrations of the various joints than are the full-page coloured plates in this part of the volume. One might almost say that each fibre of each ligament has been carefully reproduced, and in this, as in other respects, the book shows the enormous amount of careful work lavished upon it. If, however, it were possible to suggest improvement, here and there a plate illustrating the presence of muscles might assist the comprehension of the student.

At the end of the volume is a carefully compiled and well arranged bibliography, which should be of much assistance to the more advanced worker.

This book maintains, and more than maintains, the high standard of former editions; there is in reality little that one can find fault with in either text or illustrations. Perhaps it is not given to anyone to achieve perfection, but when a book reaches such a high standard of excellence as this one does, one is tempted to ask why it should have any faults at all, and to venture to hope that in the next edition perfection may be attained.

Cane Sugar and Heart Disease. By ARTHUR GOULSTON, M.D.
London: Baillière, Tindall, & Cox. 1914.

IN the course of this volume Dr. Goulston enters a very striking plea for the use of cane sugar in the treatment of cardiac failure, and particularly in cases of auricular fibrillation. He points out that a rabbit's heart perfused with a suitable solution of dextrose can be revived after it has ceased to beat for many hours, and shows the vital importance of dextrose in the nutrition of the cardiac musculature. It is thus in myocardial affections that dextrose may be expected to be most useful, but as even in valvular diseases cardiac failure depends ultimately upon exhaustion of the myocardium, the field for the use of dextrose is obviously very large. It must be cane sugar that is used, as beet sugar gives very inferior results, and this Dr. Goulston supposes to depend upon the presence of an activator in the cane sugar that is absent from the beet sugar. The doses he employs are large—from 2 to 4 ounces in the twenty-four hours—but it is very rarely that sugar appears in the urine, and when it does so appear, only traces of it are found. If the taste of a simple solution, in which it is best given, should cause nausea, it can be masked by flavourings such as ginger. Alcohol and sharp acids should be avoided while the sugar is being taken, the diet should be mainly farinaceous, and diuretics should be used where the urine is scanty.

A wealth of illustrative cases illustrates the value of the treatment in appropriate instances. The results are certainly remarkable, and the method would seem worthy of an extended trial.

Materia Medica and Therapeutics. By J. MITCHELL BRUCE, M.A., LL.D.(Hon.)Aberd., M.D.Lond., F.R.C.P., and WALTER J. DILLING, M.B., Ch.B.Aberd. Tenth Edition. London: Cassell & Co., Limited. 1915.

THIS well-known book has been revised to correspond with the new *B.P.*, and a section on practical pharmacy has been added which, though short, should certainly be very useful. The book continues to deal quite thoroughly with materia medica proper, but its most striking characteristic is the very clear description given of the actions of the various drugs, and Part III, which deals with general therapeutics, does so in a truly scientific fashion. A thoroughly good book; need one say more? We are all the more pleased to be able to say so, because the joint author happens to be one of the lecturers of the Glasgow school.

Materia Medica and Therapeutics—Preventive Medicine and Climatology. Being Volume VIII of the Practical Medicine Series. Edited by GEORGE F. BUTLER, Ph.G., A.M., M.D.; HENRY B. FAVELL, A.B., M.D.; and NORMAN BRIDGE, A.M., M.D. Series 1914. Chicago: The Year Book Publishers.

THIS is one of a series of ten volumes of the year's progress in medicine and surgery, under the general editorial charge of Charles L. Mix, A.M., M.D., and Roger T. Vaughan, Ph.B., M.D.

The materia medica and therapeutics section is divided into Part I, drugs; Part II, extracts of animal organs, serums, and vaccines; Part III, electricity, Röntgen rays, radium, and radioactive substances.

The preventive medicine is dealt with under the following divisions:—infectious diseases, industrial and social diseases, general sanitation, the physician and public health work, eugenics.

Climatology is very short, 13 pages in all, and an index follows the three sections.

This is a series stated to be published primarily for the general practitioner, and is arranged in several volumes to enable those interested in the special subjects to buy only the parts they desire. This volume is made up mainly of a series of synopses of articles from American, British, and Continental journals, and we doubt if it would appeal to practitioners in this country who are enabled to get similar information from the current British medical journals. The synopses, however, are quite well done.

Materia Medica and Therapeutics, including Pharmacy, Dispensing, Pharmacology, and Administration of Drugs. By Rakhaldas Ghosh, L.M.S.Cal.Univ. Edited by B. H. Deare, Lieutenant-Colonel, I.M.S., with the assistance of Birendra Nath Ghosh, F.R.F.P.S.Glasg. Sixth Edition. Calcutta: Hilton & Co. 1915.

The authors have certainly produced a very useful handbook on the subject, and it is specially well arranged and written in respect to the first four parts, viz., materia medica proper, pharmacy and dispensing, administration of drugs, and pharmacology. These four parts account for 165 out of nearly 700 pages, so that rather more attention has been devoted to their general consideration than is usual in a handbook.

Part V, materia medica and therapeutics—Section 1, inorganic materia medica, and Section 2, organic materia medica—occupies the bulk of the book, and in this edition the drugs are arranged very much in the groups that are nowadays conventional; in former editions the drugs were arranged alphabetically. Many non-official preparations are given, and each group of drugs has its pharmacology and its therapeutics set forth in the usual way and with sufficient fulness to render the book quite a good work of reference.

Part VI describes briefly vaccine and serum therapeutics, and this is followed by a few pages dealing with organo-therapy.

There is a good index. The book makes a very favourable impression, and should prove useful not only to a medical student but also to the general practitioner. It, of course, conforms to the new *B.P.*

Posological Tables, Appendix on Poisons, Index of Diseases and Medicines arranged according to their Actions. By WILLIAM CRAIG, M.D., C.M., F.R.S.E., F.R.C.S.Ed. Fourth Edition. Edinburgh: E. & S. Livingstone. 1915.

THE title accurately describes the scope of this little book. The inclusion of the form of administration of each drug in the posological tables adds greatly to its usefulness to the student. In this edition a revision has been made in accordance with the *British Pharmacopœia, 1914*, and the chief alterations, additions, and omissions effected by the new *B.P.* are summarised at the end of the ordinary posological tables.

This is an excellent book for a student, and should be exceedingly useful to him when attending the dispensary practice at the hospital. The book is small enough for the waistcoat pocket, and costs only 1s.—a very good shilling's worth.

County of Dumfries: Annual Report upon the Health and Sanitary Condition of the County for the Year 1913. By J. MAXWELL ROSS, M.A., M.B., B.Sc., F.R.C.S.Ed., County Medical Officer.

DR. ROSS'S *Report* is one which well repays perusal. It is very clearly arranged and provides much interesting reading.

The population of the county districts showed a decrease. The birth-rate was 21·6 per 1,000 living and was the lowest since 1907. The corrected death-rate was 13·6. The prevalence of the seven principal zymotic diseases was moderate, and out of 643 deaths from all causes, only 23 were due to the diseases commonly grouped under this head. Tuberculous diseases were responsible for 57 deaths, of which 32 were due to pulmonary phthisis, 12 to tuberculous meningitis, 3 to abdominal tuberculosis, and 10 to other tuberculous diseases. The total tuberculous death-rate was 1·358 per 1,000. The death-rate from phthisis showed a very large decrease during the year. The age and sex distribution of the deaths are given in tables. The infantile mortality was 99 per 1,000 births, the male rate being 105·5 and the female rate 87·9; 5 per cent of these deaths were from diarrhœa, a very low proportion.

A specially excellent part of the *Report* is the first report of the tuberculosis officer for the period ending 31st December, 1913, which expresses the joint views of Dr. Thomson, who is the tuberculosis officer, and Dr. Ross, who acts as chief tuberculosis officer. The inception of the scheme is described, and the general principles which have been decided on as to the carrying on of the work. In the first instance, the patients are left under the charge of their own medical attendant, and are simply supervised from a public health point of view. The only exception to this is that the tuberculosis officer is willing to treat such of the patients as are recommended by practitioners for tuberculin treatment. For each patient a clinical report is made out, a Register of Contacts is kept, and also a Record of Home Conditions. In addition, in regard to insured persons an epitome of the information required under the National Insurance Acts is made out for purposes of reference. There is also a chart for use of cases under tuberculin treatment. The visit to the home of the consumptive is made the occasion of giving general sanitary advice, such as is often more effective than when given by the practitioner in attendance. A very good summary of our knowledge in regard to the prevention of the spread of consumption has been made out and printed on a stiff card, and a copy is left where it is thought desirable. A more detailed statement is printed as a leaflet. The treatment in regard to contacts is notable and very praiseworthy. A notification is made out and sent to the chief medical officer recording every child of school age who is found to be in contact with a case of tuberculosis. Since the school medical inspection is a department of the

Public Health Office, the tuberculosis officer is able to go to the schools personally and examine such contacts there; but, in addition, the tuberculosis officer's notification cards are used to make a list of the children in each school who have been exposed to tuberculous infection. Such children are specially called for and examined at each subsequent routine visit of the school medical officers, so that by this means the children's health is reviewed at least once a year. In this way it is hoped that impending attacks among contacts will be detected in their early stages. This co-ordinated action between the tuberculosis officer and the school medical officers is to be highly commended, and it is a matter for regret that so far it does not obtain in Glasgow.

The tuberculin treatment by the tuberculosis officer in the various districts of the county has already been found to curtail his freedom, and necessitate weekly visits in a certain defined order. This is because it is entirely domiciliary, the distances being too great to arrange dispensary consultations.

Another notable feature of the scheme is the provision of shelters constructed of Californian redwood in the form of a square one-roomed wooden house, 7½ feet by 7½ feet by 6 feet high at the walls and 8½ feet to the roof ridge. There is a door which can be locked, but no window, but inside there are removable panels from half-way up the walls to the roof on all sides. These panels are manipulated from within the shelter, and can be arranged so as to get light and air to suit varying weather conditions. They cost £12, 10s. each. They serve the very useful purpose of continuing the open-air treatment of patients returning from sanatorium, besides keeping them apart from the other members of the family. The remainder of the *Report* relates the difficulties with regard to the water supply of Dumfries landward district, as well as problems in sewage disposal and pollution of streams; the work done in the bacteriological and chemical laboratory, and the separate reports for the burghs in the county. Notes on the weather and health statistics of 1913, and an abstract of meteorological observations conclude the volume.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

OBSTETRICS AND GYNÆCOLOGY.

Breast Feeding: A Plea for Longer Intervals. By Harold K. Waller in the *Journal of Obstetrics and Gynæcology of the British Empire*, February, 1915 (issued in July).—The writer remarks on the comparatively small amount of work done in the investigation of breast feeding and the large amount in artificial feeding of infants. His contribution is to emphasise the need for correlation between (1) the periodicity in the secretion of milk, (2) the size of the meals, and (3) the infant's appetite. Dr. Waller is of opinion that in a large proportion of mothers the failure to nurse after the first few weeks is due to a failure to take note of this periodicity in the function of the breast—that is, where the mother and child are normal to start with—and he excludes cases of tuberculosis and other diseases which contra-indicate breast feeding. This periodicity is not always demonstrable in primiparæ till suckling has continued for some weeks, while in multiparæ it is often recognisable earlier. For its establishment all that seems necessary is the regular stimulation of suckling with a sufficient interval between the infants' meals. In cases where the periodicity is firmly established, the engorgement may occur at the appointed time even without the breast being stimulated by suckling. It is accompanied by a sensation which the mother describes as a rushing, tearing or stabbing, and commonly calls the "draught." The maintenance of the draught throughout lactation is perhaps the best sign that the feeding has been normally carried out. Conversely the absence or rarity of draught after lactation has been carried on for a few weeks should rouse suspicion that the methods are faulty.

Dr. Waller maintains that the custom of urging women to feed their infants every two hours is responsible for weaning in a large number of cases. The reason for the custom is the belief that the infant's stomach is small, but it is not improbable that the water of the milk passes quickly through the pylorus. In the ruminants and carnivora the breast milk forms a solid clot requiring prolonged gastric digestion, and in them the capacities of stomach and of intestines are as 7 to 3. In the non-ruminant herbivora—*e.g.*, horses— as also in man and monkeys, the breast milk forms a flocculent curd; in horses the stomach capacity is to intestinal as 1 to 9, while in man it is as 1 to 4. A baby at 21 days often swallows 7 ounces of breast milk.

Comparative tables are given showing that a child fed every three hours in the first few weeks absorbs more milk than a child fed every two hours. The saving of wear and tear to the mother is enormous: merely to look at the figures allows this to be realised, for a child fed for forty-five days nine times daily received 413 meals, while in the same period one under Dr. Waller's care received only 255 meals, a saving to the mother of 158 meals in less than seven weeks.

One of the tables shows that one child at the twenty-third week took 48 ounces of breast milk in four meals, receiving nothing between 6 P.M. and 6 A.M. next morning.—E. H. L. OLIPHANT.

Malta Fever in Obstetric Practice. By Amédée Laffont (*Archives Mens. d'Obstet. et de Gynécol.*, March-April, 1915).—Laffont has had experience in Algiers of *Malta*, *Mediterranean*, *goat-milk*, or *undulant* fever as it has been variously known. He quotes the experiences of various epidemics in the South of France and elsewhere, and discusses Wright's sero-agglutination reaction and blood cultures, and concludes that the positive results may be considered diagnostic; but failure of one or both tests does not permit the clinical diagnosis to be set aside, especially during an epidemic, more especially as the serum diagnosis may be obscured by the *micrococcus paramelitensis.*

The disease is protean in its aspects, but among the organs specially affected the genitals are frequently interested—orchitis in the male, mammitis, ovaritis, &c., in the female. Ovaritis may be so acute as to simulate an attack of acute appendicitis, and the pain is sometimes intense.

The presence of the micrococcus in the vaginal secretions has led to the belief that the disease can be conveyed by contagion, and experiments on monkeys confirm this view. Among the symptoms of importance to the gynæcologist are dysmenorrhœa—often early in the disease; ovarian pain as mentioned above, often with onset during menstruation; metrorrhagia, early in the disease, and it may be mentioned that hæmorrhagic cases are commonly severe; amenorrhœa, usually late in the disease, and the condition may persist many months after the disease has been apparently cured; the presence of the micrococcus naturally leads to leucorrhœa; mammitis has been already mentioned.

The author sums up the evidence, and is of opinion that Malta fever frequently causes abortion in women as in the goat and sheep, and occasionally causes death of the fœtus *in utero.* Uterine contractions usually start, in such cases, during a period of high temperatures. The passage of the coccus through the placenta has not been found in the human subject, but has been demonstrated experimentally in goats. Children born alive are usually enfeebled, and often succumb early. Conversely, pregnancy does not convey any immunity against the fever, which may be contracted at any stage of the pregnancy, and the course of the disease is in no way modified. It is to be noted that women suffering from the fever frequently have prolonged labours, and often have hæmorrhages during delivery, whether premature or at term. The effects of labour on the course of the fever seem to be accidental, but if the disease manifests itself during labour or early in the puerperium the symptoms are liable to be confounded with those of a puerperal sepsis.

The milk of nursing mothers—as of goats—contains the micrococcus in abundance, and occasionally infects the suckling, but more commonly the infant seems more or less immune; in any case, nursing at the breast should be forbidden.

The puerperium seems often to determine the manifestation of the disease which has been lying dormant, and, as mentioned above, the symptoms—rigors, tympanites, high fever, fœtid lochia—may require a sero-agglutination test to clear up the diagnosis. Such troubles as phlebitis, osteitis, endocarditis may be occasioned by this disease.

There is no specific treatment mentioned for this fever—the usual therapeutic remedies for fever, aspirin, baths, &c., but Laffont specially mentions that induction of labour is contra-indicated. Thirty-two cases are recorded at length, and there is a bibliography.—E. H. L. O.

X-RAY, &c.

The X-Ray Investigation of the Colon. By James T. Case, M.D., Battle Creek (*Archives of the Roentgen Ray*, April, 1915).—In the past too much importance has been given to form and position revealed by the Roentgen ray. Ptosis is perhaps the least important point elucidated.

Antiperistalsis is the prevailing movement in the proximal colon—that is, a movement of waves backwards towards the cæcum. These waves may run at the rate of five to the minute for four or five minutes, and then pass off for a time. The distal colon constantly shows haustral churning or segmentation which serves to mix the contents. Reider describes a *pendulum movement*—winding and turning of those parts which have a long mesocolon without actual transportation of bowel contents.

The principal propulsive movement is the mass movement first described by Holzknecht:—"The bowel contents suddenly lose their haustral markings, and are formed into an ovoid sausage-shaped mass with perfectly smooth edges, and rounded at the ends. The mass travels at about twice the rate of peristaltic waves in the stomach. As the mass comes to rest the haustral indentations reappear—quickly if the bowel contents be semi-fluid, more slowly if the bowel content is of firmer consistence." These mass movements occur about six times daily. "The filling of the stomach and the movements of the colon by respiration are important factors in the shifting of the contents of the colon." Colon contents can be shifted very little, if any, by massage, mechanical or manual. Following a meal in which barium sulphate constitutes the opaque substance the stomach should be empty within four to four and a half hours, when the head of the barium column should have reached the cæcum. The entire meal should have passed into the colon by the eighth or the tenth hour; by this time the head of the column should have reached the middle of the transverse colon. The head of the barium column should reach the descending colon from nine to sixteen hours following the ingestion of a meal, and the colon should be practically empty of barium at the thirty-sixth hour. When bismuth is the opaque substance the progress is much slower. No purgatives should be given on the day immediately preceding the examination. The barium meal should be substituted for one of the ordinary meals, so that the rhythm of meals will not be disturbed.

The study of the colon after a barium meal is more likely to give accurate information concerning the function of the bowel, the barium enema being reserved for cases of gross obstruction, "tumours, adhesions, bands, &c.," and for testing the ilco-colic valve. Following the meal examination should be made at the ninth, twenty-sixth, thirty-second, and fiftieth hours. The barium enema may consist of 2½ drachms of gum tragacanth shaken up with about an ounce of alcohol, then add 20 oz. warm water and shake, add 3 oz. barium sulphate, shake, add other 20 oz. warm water.

Technique.—The bowels should have been thoroughly cleared by medicine and enema. The patient lies on his back with the tube underneath. The container should be two to three feet above the patient's level, so that the fluid flows in slowly by gravity through an ordinary enema tube. The fluid is watched as it passes along the colon, and palpation by means of a rod (to save the operator's hands) is performed, by which means adhesions can be made out.

Constipation may be *hypokinetic* or *dyskinetic* in form. In the first there is lack of muscular tone, in the latter excessive motility and antiperistalsis. The writer finds that it is in these cases that ileo-cæcal valve incompetency occurs most frequently. For those cases in which the contents move normally until they reach the rectum and are there retained, the term *dyschezia* has been used. It is the writer's opinion that in the majority of cases the cause of constipation is to be found in the pelvic colon and rectum, and in these cases adhesions of this portion of the bowel are almost invariably found.

Certain intra-abdominal neoplasms may be studied by their dislocation of the colon. Tumours of the kidney tend to dislocate the colon towards the middle line. Tumours of the spleen usually occur in front of the colon, and produce no displacement. Tumours of the pancreas and retroperitoneal tumours usually dislocate the transverse colon downwards. Normally it never happens that barium is in the ileum and also in the transverse colon at the same time, while the cæcum and ascending colon are empty. Such an appearance is strongly suggestive of ulceration in the cæcum and ascending colon.

Colitis if affecting a region is to be recognised, after an enema, by narrowing at that portion, the shadow being smooth-edged.

Insufficiency of the ileo-cæcal valve is best shown by means of the barium enema. This condition is the usual cause of stasis of the ileum. "One of the most important lessons pointed out by the foregoing summary of Roentgen studies of the colon is that the *x*-ray investigation of any part of the alimentary tract must include a careful study of the entire digestive system. Just as in roentgenography of urinary calculi one does not feel justified in reaching conclusions without having carefully searched the entire urinary tract, so also in gastro-intestinal roentgenology one should not express any conclusions until the entire alimentary tract has been studied. The various segments of the alimentary canal present such an intimate interrelation governed by reflexes, not as yet any too well understood, that conclusions, especially when operative measures are to be based upon them, should be expressed only after the most thorough going studies."—Jas. R. Riddell.

A Note on the Passage of Fluids through the Body of the Stomach. By Geoffrey Jefferson, M.S., F.R.C.S. (*Archives of the Roentgen Ray*, May, 1915).—The opaque meal on entering the stomach collects high up in the fundus, and from thence passes down the lesser curvature in a narrow stream to collect in quantity at the lower pole. So narrow is the stream that it is impossible to suppose that the stomach walls are contracted down to that extent. The writer undertook a new survey of the gastric musculature to find an anatomical basis for this phenomenon. This he discovered only on dissecting the stomach in the vertical position, when it is found that the inner oblique muscle stratum is so arranged "that it forms an inverted U over the stomach, produces the incisura cardiaca, and by its specialised contraction would be capable of shutting off, with the help of the mucosal ridges, a physiological canal along the lesser curvature. It is down this canal that the bismuth falls from the magenblase to the beginning of the pars pylorica." "Further, the manner in which fluids are led down to the lowest part of the stomach by the oblique muscle suggests that the ideal spot for gastro-enterostomy should be at the lower end of the canal, *i.e.*, about one finger's-breadth to the left of a line drawn across the pars pylorica and continuing the curvatura minor of the pars cardiaca downwards."—JAS. R. RIDDELL.

Books, Pamphlets, &c., Received.

A Treatise on Materia Medica and Therapeutics, including Pharmacy, Dispensing Pharmacology, and Administration of Drugs, by Rakhaldas Ghosh, L.M.S. Cal. Univ. Edited by B. H. Deare, with the assistance of Birendra Nath Ghosh, F.R.F.P.S.Glasg. Sixth edition. Calcutta: Hilton & Co. 1915. (7/6 net.)

Cancer: Its Cause and Treatment, by L. Duncan Bulkley, A.M., M.D. New York: Paul B. Hoeler. 1915. ($50 net.)

The Clinical Anatomy of the Gastro-Intestinal Tract, by T. Wingate Todd, M.B., Ch.B., F.R.C.S.Eng. London: Longman, Green & Co. 1915. (6s. net.)

The Book of the Fly: A Nature Study of the House-Fly and its Kin: The Fly Plague and a Cure, by Hurlstone Hardy, with an Introduction by Halford Ross. London: William Heinemann. (2s. 6d. net.)

A Guide to the Use of Tuberculin, by Archer W. R. Cochrane, M.B.Lond., F.R.C.S.Eng., and Cuthbert A. Spranson, M.D., B.S.Lond., M.R.C.P. London: John Bale, Sons & Danielsson, Limited. 1915. (5s. net.)

X-Rays: How to Produce and Interpret Them, by Harold Mowat, M.D.Edin. London: Henry Frowde and Hodder & Stoughton. 1915. (8s. 6d. net.)

Transactions of the American Surgical Association. Volume XXXII. Edited by Archibald MacLaren, M.D. Philadelphia: William J. Dornan. 1914.

Diabetes Mellitus, Designed for the Use of Practitioners of Medicine, by Nellis B. Foster, M.D. London: J. B. Lippincott Company.

Simple Methods of Radiographic Localisation, by Thomas Rankine. Edinburgh: W. Green & Son. 1915. (1s.)

Sanitation in War, by Major P. S. Lebean, F.R.C.S., D.P.H., R.A.M.C. With an Introduction by Surgeon-General Sir Alfred Keogh, K.C.B., M.D., F.R.C.P. With 39 illustrations. London: J. & A. Churchill. 1915. (5s. net.)

Urgent Symptoms in Medical Practice, by Robert Saundby, M.D.Edin. London: Edward Arnold. 1915. (7s. 6d. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FIVE WEEKS ENDED 24TH JULY, 1915.

	WEEK ENDING				
	June 26.	July 3.	July 10.	July 17.	July 24.
Mean temperature, . .	55·4°	60·7°	59·8°	56·7°	57·9°
Mean range of temperature between highest and lowest,	15·5°	15·8°	11·6°	14·1°	12·8°
Number of days on which rain fell, ...	2	6	3	4	6
Amount of rainfall, . ins.	1·17	0·47	0·26	0·35	1·36
Deaths (corrected), . .	361	393	356	272	314
Death-rates, ...	17·5	19·0	17·2	13·2	15·2
Zymotic death-rates, . .	3·7	3·3	3·7	2·1	2·3
Pulmonary death-rates, .	3·8	3·7	3·1	2·2	3·1
DEATHS—					
Under 1 year, . . .	76	55	75	44	55
60 years and upwards, .	75	74	71	55	65
DEATHS FROM—					
Small-pox, ...	...	...	...	...	...
Measles, ...	51	53	57	31	29
Scarlet fever, . . .	6	1	3	5	4
Diphtheria, . . .	3	4	5	2	2
Whooping-cough, . .	15	7	10	5	9
Enteric fever, . . .	1	...	1	1	2
Cerebro-spinal fever, . .	5	3	5	4	1
Diarrhœa (under 2 years of age),	2	6	5	8	10
Bronchitis, pneumonia, and pleurisy, . . .	57	61	38	30	43
CASES REPORTED—					
Small-pox, ...	...	...	...	...	...
Cerebro-spinal meningitis, .	12	4	7	3	4
Diphtheria and membranous croup, ...	31	20	22	18	21
Erysipelas, . . .	19	27	25	16	30
Scarlet fever, . . .	117	92	106	72	95
Typhus fever, . . .	...	...	...	...	...
Enteric fever, . . .	5	4	5	6	2
Phthisis, ...	53	42	48	60	10
Puerperal fever, . .	1	4	1	1	5
Measles,*	782	834	548	325	190

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, 30*th July*, 1915

THE

GLASGOW MEDICAL JOURNAL.

No. III. September, 1915.

ORIGINAL ARTICLES.

MEDICAL CONDITIONS IN GLASGOW ONE HUNDRED YEARS AGO.

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It has been frequently remarked that one hundred years ago this country, and, indeed, the whole of Europe, was passing through a crisis in many respects comparable with that which we are experiencing at the present moment. This alone would make it worth while to cast our minds back to survey the Glasgow of a century ago; but from the medical standpoint also there is much in the period to arouse our interest. Then, as now, the insular position of our country kept us immune from much of the suffering imposed by the wars on our continental neighbours, and left us relatively undisturbed. Far removed from the scene of hostilities, our factories were humming centres of industry, and, while they were manufacturing with feverish activity the materials of war for our own and the allied armies, our medical schools were engaged in the analogous task of turning out in large numbers the surgeons who were to supply the needs of our civil population and our armies abroad. And, over and above the changes incident on the state of war, the period in question was one of transition in almost every department of medical affairs; the education of the practitioner, both systematic and clinical, the control of medical practice, the demarcation of medicine, surgery and the specialties, and even ideas of treatment, were undergoing a rapid change, and nowhere could that change be more easily traced than in Glasgow, a rapidly growing community with a medical school of considerable and increasing importance.

The environment in which our medical forefathers carried on their work was very different from that to which we are accustomed. While its population at the beginning of the nineteenth century was not much more than one-tenth of its present size, Glasgow was already a city of no little importance; it was, indeed, in size, in population, and in wealth, one of the foremost cities of the kingdom. The loss of the American colonies had almost ruined the tobacco industry—an early source of Glasgow's wealth; but the Industrial Revolution, with all that it brought in its train, especially in the development of the iron and steel and textile industries, had introduced a new era of prosperity.

Were it possible for us to return and survey the Glasgow of those days, perhaps what would surprise us most of all would be the comparative unimportance of the only part of the city familiar to most of us, namely, the part west of Glasgow Cross. Sauchiehall Street was then Sauchiehall Road, a pleasant country lane; the streets of Garnethill were non-existent, indeed the Observatory stood on Garnethill; the villas built on Blythswood Hill, now the site of Blythswood Square, looked west to the open country; and as late as 1817 the Botanic Gardens were established, well out of town, on the ground now occupied by Fitzroy Place. Partick and Govan were mere villages, the chief industries of the latter being weaving, farming, and salmon fishing in the Clyde. Our river was not then the important waterway it has now become, but a comparatively shallow stream which periodically overflowed its banks and flooded the lower parts of the town.

At the beginning of the nineteenth century the shipping at the Broomielaw consisted of only the smallest craft. Steam navigation was in its infancy. It was not till 1812 that Bell's *Comet* began to ply on the river, and readers of Lord Kelvin's biography will remember his story of the surprise with which he and his companions, walking from Greenock to Glasgow, descried the smoking funnel of the little vessel creeping slowly down the river.

The streets of our city were muddy and ill-paved, and the discomfort, and even danger, of the pedestrian, were increased by the absence of efficient lighting. Quite a sensation was created by the introduction of coal gas about 1808. In that year, we are told, Dr. Thomas Thomson, afterwards Professor of Chemistry in our University, walked all the way from Edinburgh to see the Tontine lit up by coal gas, and it was not till nine years later that gas was used for the lighting of the streets. Railways, of course, were unknown in the neighbourhood until 1831, when a line was constructed from Glasgow to Coatbridge. A certain amount of traffic went on by the Paisley and Forth and Clyde Canals, but most of the distance traffic, to such places as Ayr, Edinburgh, and London, was carried on by stage coach, a means of locomotion which was then in its hey-day. The four-in-hand coach from London took forty-four hours to complete the journey, and used one hundred and eighty horses, yet it is said that it drove up the Trongate each evening so true to time that the shopkeepers, as it passed, set their watches by it. Within the city itself means of transit were few, nor were they greatly needed at a time when the area of the city was so small, and life as a whole more leisurely than it is now. The noddy was the fashionable conveyance for persons of quality, while the lady of fashion who lived in some suburban retreat about Monteith Row or George Square found the sedan chair quite a rapid enough conveyance to take her to the private party or public assembly.

The prominent landmarks of those days were the towers of the Tron Church, the Tolbooth, and the Cathedral; and the haunts to which we would naturally turn our steps, the medical institutions, the University, and the hospitals, were all situated almost within a stone's throw of the Cross.

The whole town, at the time of which we speak, was laid out practically along the lines of two intersecting streets; one, a mile and a half long, running east and west, and known by the names of Gallowgate, Trongate, Argyle Street, and Westergate, the other, three-quarters of a mile in length, running north and south, and forming Castle Street, Kirk Street, High Street, and the Saltmarket.

Close beside the Green, then the only public park, and just to the west of the Stockwell Bridge, stood the Town's Hospital, the oldest of the city hospitals, erected in 1773 for the reception of the sick and aged poor. The building was a handsome one, indeed at the date of its opening it was described as palatial, but it had now yielded the palm to the new Royal Infirmary and the still newer Lunatic Asylum in the northern part of the town. Still it housed some three hundred persons, chiefly old and infirm. The insane, recently removed to the new Asylum, had been confined to damp, dark, ill-ventilated cells in the back part of the building, which were subject to occasional inundation by the rising of the river in times of flood, and, considering the unenlightened views that had hitherto prevailed in regard to the treatment of the insane, the lot of these hapless inmates must have been distressing in the extreme.

While the industrial activity of the town was greatest in the area east of the Cross, the intellectual life was to be looked for rather in the parts to the west and north. The Tolbooth Steeple, a striking feature of this part of the city to-day, was even more of a landmark to the citizens of a hundred years ago, for it formed, with the buildings to the immediate west of it, Prison, Court House, and Council Chamber in one. It is not long since this interesting relic was saved from destruction by fire; one wonders whether, in spite of threats, it is destined to stand yet a while on the spot from which it has witnessed so much that was of interest and importance in the earlier life of the city. Had one strolled westwards from the Tolbooth along the Trongate, one would have passed the shops of many of the important medical practitioners of the town, and, arriving at St. Enoch Square, one would find the Faculty Hall, the home of the Faculty of Physicians and Surgeons, which was then engaged in an almost life and death struggle with the University for the preservation of its licensing monopoly. Thence one would make one's way up Buchanan Street, then the most westerly of the streets of the town and only recently built, and through the residential quarter of George Square to John Street, where stood Anderson's College. A very short walk would bring us to the northern outskirts of the town, where we would discover the new Lunatic Asylum. This noble building, opened in the year 1814, owed its foundation to the inadequate and unsatisfactory accommodation for the treatment of the insane in the old Town's Hospital. Its creation coincides with the dawn of a new era in the treatment of the insane. Hitherto, as we have seen, a few dark and filthy cells in the old Town's Hospital were all that could be offered to those unfortunate creatures; and not only so, but the whole conception of the appropriate treatment of insane persons was based on ideas of restraint, not of amelioration, much less of cure. In no department of medicine can the transition from the old to the new be more easily realised than in this matter of hospital provision for the mentally afflicted, and the contrast is clearly drawn in the following words, quoted from the first annual report of the Directors of the Royal Asylum, in which reference is made to the removal of the patients from the Town's Hospital to their new home:—"The advantages," says the report, "of comfortable accommodation, of cleanliness, of regular exercise, and of warm bathing are already apparent. Some who formerly shivered in filth and nakedness are now clothed and clean; others who sat cowering in a position so unnatural that in no long time it renders the knee-joints incapable of motion, are now induced to walk daily; nay, several who spent their time in idleness or mischief have already begun to assist the servants, with much contentment to themselves, and some benefit to the institution."

The Asylum to which we are now alluding was superseded in turn by the larger buildings of Gartnavel, and for many years formed part of the City Poorhouse in Parliamentary Road. It has been quite recently demolished.

Eastwards from the Asylum we would find ourselves on truly classic ground at the "Townhead," the home, then as now, of the Cathedral and the Royal Infirmary, and the ground on which the earliest Glasgow settlement was founded. The old G.R.I. had only reached its majority in the year 1815, and had been built, like the Asylum, in response to the demands which could not be met by the Town's Hospital. At the date of which we are speaking it included amongst its physicians Dr. Richard Miller, Lecturer on Materia Medica at the University, and Dr. Robert Watt of *Bibliotheca Britannica* fame; amongst its surgeons Dr. John Burns, first Professor of Anatomy in Anderson's College and first Professor of Surgery in the University, Dr. G. C. Monteath, Glasgow's first oculist, and Dr. James Watson, commemorated in the Royal Faculty's "Watson" Lectureship; and in its list of house surgeons and clerks a trio of life-long friends, Harry Rainy, William M'Kenzie, and James Armour.

In the Rotten Row, not far from the Royal Infirmary, stood the Lock Hospital, founded as early as 1805, and near it there still existed the "Auld Pedagogy," one of the old pre-Reformation manses, which had at one time been the home of the University. A short distance further south, in the High Street, stood the University itself, still held in affectionate remembrance by many of our seniors who studied within its walls. Even to-day, with factories on every hand, the air of the "Townhead" is remarkably clean; and in those earlier days, when steam power with its accompanying smoke and dirt was in its infancy, the old College quadrangle must have possessed something of the mediæval atmosphere one associates with the Colleges of Oxford.

A glance through the slender booklet which constitutes the Glasgow Directory for 1815 reveals the fact that there were, in a population of about 110,000, 56 men describing themselves as "surgeon," 15 distinguished as "Dr," 12 midwives, and 3 dentists. Comparing these figures with those of the present day, it would appear that, while the proportion of medical practitioners to the population has scarcely altered, the dentists are relatively five times as numerous. This is not only due to the greatly increased demand for dental work, but also to the fact that the latter has passed from the hands of the surgeon into those of the specialist.

Of the three dentists then practising in Glasgow, one was a Mr. James Scott, whose first arrival in the town, in 1802, had been heralded by an advertisement to the effect that "Mr. James Scott, Surgeon Dentist, 28 South Bridge, Edinburgh, intends to visit Glasgow annually, and will be found at Mrs. Paterson's in

Garthland Street." He was the first *bona fide* dentist in the town, and did so well that he took up his abode permanently in Glasgow. This is an interesting event, for, if we exclude the midwives, it was perhaps the earliest example in Glasgow of that specialism in medical practice which was soon to manifest itself in various directions. Specialists as a class did not exist in Glasgow a hundred years ago. It is true that midwifery had been practised as a specialty for centuries, but only by midwives. The man-midwife, as a medical specialist, does not seem to have arrived until the year of Waterloo, for in the Directory for 1815 appears for the first time the description "Surgeon and Accoucheur." Even the systematic instruction of medical students in midwifery was a comparatively late development, and it is exactly one hundred years since a chair of midwifery was instituted in our University. The tendency to specialism soon made itself more apparent. The first ophthalmic surgeon was Dr. Geo. C. Monteath, who was soon joined by Dr. William M'Kenzie, these two being the first surgeons to the Eye Infirmary, which was opened in 1824. Had the plans of Granville S. Pattison not miscarried, Glasgow would have had, about this time, one of its ablest practitioners confining himself to the practice of surgery "strictly so-called," but events took a turn which rendered this impossible.

The growth of interest in the specialties can be best seen in the foundation of the special hospitals. Perhaps the earliest of these was the Lock Hospital, established in 1805, and, as we have seen, special provision for the insane was made in the Royal Asylum, which came into being just one hundred years ago. No doubt the foundation of these two institutions was hastened to some extent by the public interest in the segregation of their inmates, but in the case of the Asylum at least the event symbolised and coincided with an enormous advance in the study and treatment of the patients concerned.

For hospital provision in the case of the other specialties Glasgow had some time to wait. There was still no isolation of the fevers, such conditions as small-pox, typhus, and cholera being freely admitted to the Royal Infirmary; indeed, in the great epidemic of 1818, typhus patients constituted 60 per cent of the inmates of the Infirmary. It was in 1829 that the separate fever house was built. The Maternity Hospital followed in 1834, but special hospitals or dispensaries for the skin, ear, diseases of women, and diseases of children all came later than 1860.

Returning to our consideration of the practitioners of one hundred years ago, the "surgeons," who were the general practitioners of the period, were sharply marked off from the "pure physicians" or consultants. Most of the surgeons occupied a shop, in which they consulted and dispensed their medicines, and even University professors had their shops in the Trongate, Stockwell, or some neighbouring street. To understand the distinction between the surgeons and the physicians it is necessary to go back two centuries further in the medical history of Glasgow. Up to the end of the sixteenth century there had been no regulation of medical practice in Glasgow. In the year 1599 Dr. Peter Lowe received from King James VI a charter which enabled him and his colleagues to found the Faculty of Physicians and Surgeons, whose duty it was henceforth to examine, and, if thought fit, to licence persons desiring to practise the art of surgery in Glasgow and quite a large portion of the West of Scotland. Hence it became necessary for anyone desiring to practise within this area to obtain such training in his art as would enable him to pass his examinations and be admitted a member of the Faculty. It was usual to obtain this education as an apprentice, and, after the opening of the Royal Infirmary in 1794, by more or less informal training in the wards of the Infirmary. At first, entrance to the membership was comparatively cheap, especially to those who had served their apprenticeship in Glasgow, but gradually the fees were raised, chiefly because of the cost of the Widows' Fund, to a figure which could not be met by the young practitioner, and this led to the institution of the Licentiate grade, which was less costly and entailed fewer privileges. Although the training thus obtained was entirely unsystematic, the apprentice became a competent practitioner of the surgical craft, and in this respect differed from the physician, who, unless he had first qualified as a surgeon, might have a very limited knowledge of medical practice.

Glasgow University at the beginning of the nineteenth century did not provide a medical education as we understand it to-day. There was no provision for the practical or clinical teaching of the all-important subjects of medicine, surgery, and midwifery. The medical curriculum comprised only anatomy, chemistry, theory of medicine (including all that was taught of physiology and pathology), and materia medica. Chairs of surgery and midwifery were added in 1815, but up to that date the character of the tuition provided and insisted upon was largely theoretical. But Glasgow was soon to witness another of the important transitions in medical affairs that characterised the period to which we are referring. The term "physician" was reserved for men holding the degree of M.D. from a University. The physicians were recruited from two different sources; some had qualified and practised as surgeons, but, having decided to confine themselves to consulting work, had obtained the degree and entered the ranks of the "pure" physicians; others had never practised surgery, but, after the necessary courses of study, which were not exacting and might be purely academic, had received the degree of M.D.

It might be of interest to refer to the regulations which were in force a hundred years ago in the Faculty and in the University for the granting of their respective qualifications. The Faculty laid it down that before a candidate was examined he must produce certificates to prove that he had attended medical lectures delivered either in a University, or by resident members of the Colleges of Physicians or of Surgeons of London, Edinburgh, or Dublin, or by members of the Faculty of Physicians and Surgeons of Glasgow. If he had not served an apprenticeship of three years to a regular practitioner of surgery or pharmacy, he must have attended two courses in anatomy and surgery, one in the theory and one in the practice of physic, one in materia medica, one in chemistry, one in midwifery, and twelve months in a public hospital; he must also present a certificate of his having regularly studied practical pharmacy in a surgeon's or apothecary's shop for six months, and all this in the course of three winter sessions. If he had served his three years' apprenticeship, although the whole of these lectures must be attended, they might be taken in the course of two sessions. The candidate thus qualified was examined in his knowledge of anatomy, surgery, and pharmacy by a committee of twelve, who also appointed him an essay in some appropriate subject.

The University regulations stated that a candidate for the degree of M.D. must be at least 21 years of age; that he must have attended for at least three years (sessions of six months each) classes in some University, or under an eminent teacher in London, as follows:—Anatomy and surgery three sessions, theory and practice of physic two sessions, chemistry two sessions, materia medica and pharmacy two sessions, and midwifery and botany each one session; and that he must have spent one of these sessions at Glasgow University. He was submitted to three examinations in private by medical professors of the University—(1) in anatomy and physiology, (2) in the institutes and practice of physic, and (3) in chemistry, materia medica, and pharmacy, with a commentary on an aphorism of Hippocrates, and another on a case of disease propounded by the examiners. The whole examination, including the commentaries, and a thesis if presented, must be written in Latin.

A comparison of the prescribed courses of study might suggest a balance of efficiency in favour of the University, but it must be remembered that the apprenticeship was the backbone of the medical training anticipated in the rules of the Faculty, and was, in fact, served by the vast majority of those who desired to practise as surgeons in Glasgow and its neighbourhood, while the University ordinances demanded no proof of clinical study, and it was notorious that, in the past at any rate, the medical knowledge of many M.D.'s had been purely academic. It is easy to see that many of them, although they might be men of culture, were quite untrained in the "healing art," and the Faculty jealously guarded itself against the encroachments of such men, and compelled them to limit their practice to that of the physicians. While the surgeons considered the work of the latter to be less practical than ornamental, the physicians in turn looked upon the surgeons, who were still, up till 1722, to some extent allied with the barbers, as of an inferior rank.

As time went on and men realised that the membership and even the licence of the Faculty were costly to obtain, while the degree conferred a certain dignity on its possessor and could be obtained more easily and more cheaply, an increasing number entered themselves for the degree, and took the risk of starting general practice with no other qualification and without seeking the permission of the Faculty. In 1815 the Faculty raised an action against four practitioners of this kind to restrain them from practising within its jurisdiction without its licence, and the Faculty won its case. As a counter-move the University instituted a degree in surgery, the C.M., and this was largely taken advantage of. In 1826 the Faculty raised another action against twenty-three University C.M.'s in Glasgow and the West of Scotland, in support of its claim that the C.M. degree did not, of itself, entitle its holder to practise surgery within the jurisdiction of the Faculty. Thus did the Faculty gallantly uphold the vested interests established by its charter in 1599, while the University, which did not confer a medical degree until the beginning of the eighteenth century, and did not seriously attempt to teach medical subjects till about fifty years later, was slowly but surely undermining the privileged position of the Faculty, and endeavouring to secure for its graduates the right to practise all branches of medical work in Glasgow without the licence of the Faculty.

Not only was the University at that time legally debarred from granting its graduates permission to practise surgery in Glasgow, but it was unable to offer them proper practical training in medicine and surgery for want of compulsory clinical courses. Just about one hundred years ago the proposal to make clinical courses obligatory was first raised. Ten years later the Managers of the Royal Infirmary resolved that every student attending the Infirmary must take out such courses. Shortly thereafter the Faculty and the University added the clinical subjects to their curricula, and this advance must have been a severe blow to the apprenticeship system, which had been such an important element in the training for the Faculty's qualification. Thirty or forty years later still the privileged position of the Faculty in the granting of permission to practise within its territory was abolished by the acts which established our present system of medical registration.

Although the medical curriculum offered by the University was for a long time composed only of the subjects of anatomy, chemistry, medicine, and materia medica, and these were taught in a purely theoretical matter, still we must recognise that up till near the end of the eighteenth century this constituted the only systematic medical tuition in Glasgow. On the other hand, the first regular lectures were delivered, not in the University, but extramurally, by Dr. William Cullen, to whose enthusiasm was really due the establishment of the medical curriculum as it existed in 1815. Other subjects had been taught extramurally in a sporadic way before the date of which we speak; but, had the somewhat grandiose intentions of the founder of Anderson's College been capable of fulfilment, there would have been in existence at the beginning of the nineteenth century a medical school in Glasgow which would have put the curriculum of the University to shame. But Anderson's ideal was much in advance of his ability to bring about its realisation. At his death it was found that only a sum of one thousand pounds was available to carry out the provisions of his will; but although Anderson's scheme to establish a great University was never to be realised, the part played by his bequest in the educational history of Glasgow, and even in a much wider sphere, was by no means a small one. In the year 1815 the buildings of Anderson's College, situated on the west side of John Street, contained a great hall, said to have been capable of accommodating 500 persons, with a library and apparatus room attached; but the anatomical work, conducted by Dr. John Burns, was largely carried on in his own rooms in Virginia Street.

Extramural medical teaching in Glasgow at that period may be said to have been almost entirely anatomical, but how flourishing this was may be gathered from the figures given in Dr. Duncan's *Memorials of the Faculty of Physicians and Surgeons.* The early years of the nineteenth century had seen a great increase in the number of medical students in Glasgow, one of the reasons, if not the chief reason, for which was the enormously increased demand for surgeons for the armies so extensively engaged in the continental wars. The contrast between the dearth of medical students to-day and the rapid expansion of their numbers in response to somewhat similar needs a century ago, is in itself a commentary on the much greater complexity and stringency of the medical curriculum at the present day.

When one recalls that the Anatomy Acts, which made legal provision for the supply of bodies for dissection, were not passed until 1832, one is naturally prompted to ask where material could be obtained to supply the needs of eight hundred medical students in a single year. The only legitimate sources of dissecting room material at that time were the bodies of executed criminals and those of private persons voluntarily given up by their friends. Both of these sources were quite inadequate, and, while the demand was probably to some extent met by the receipt of bodies from Ireland, there can be no doubt that the lifting of bodies recently buried in the local graveyards was largely practised. This was, of course, entirely contrary to law, and the Faculty itself frequently passed strongly worded resolutions condemning the practice and threatening severe penalties on members guilty of it; but still it went on. It is not difficult to understand the somewhat inert attitude of the civil powers in the matter. It was very easy for them to wink at the practice so long as the bodies lifted were those of obscure persons. Riots occurred on more than one occasion when the body-lifters had made the mistake of appropriating the corpse of some respected member of society, and the same would happen to-day under similar circumstances. The smooth working of the system legalised by the Act of 1832 depends on the existence of a class so far down in the social scale that there are no friends to claim or care for their remains. One can imagine the howl of indignation that would be raised were it ever necessary to ask for a supply of dissecting material from even the lowest of the articulate classes of the community. But, even without suspecting a half-concealed acquiescence on the part of those responsible for the suppression of body-lifting, the state of the city and of society in general in those days made it difficult to put an end to the practice. The police force of Glasgow was only established in 1800, and was a very small body of men. It rendered the streets of the town itself comparatively orderly at night, but left the unlighted suburbs entirely at the mercy of lawless persons. Robberies with violence were everyday occurrences in parts which were scarcely even suburban, and it must have taken no small amount of courage for simple persons to be out of doors when the body-lifters were abroad. No doubt the more wealthy burghers would be able to provide for the protection of their dead until the danger of exhumation was over, but many of the graves of humbler citizens must have been entirely unprotected. Apparently it was not uncommon for medical students to make themselves responsible for the lifting of the bodies, in return for which service they received certain dissecting facilities and tuition free of charge. This would serve the further useful purpose of relieving the teachers of direct responsibility in the matter. But the owners of the dissecting rooms did not always escape suspicion. In 1814 there was a private anatomy class in College Street run by Drs. Andrew Russell and Granville Pattison. One night the grave in the Ramshorn Churchyard of the wife of a respectable haberdasher had been disturbed and the body removed, probably in mistake for that of a humbler individual. The noise made by the students wakened the watchman, and they were pursued, but managed to get the corpse to the rooms. However, the hue and cry was raised, and a search warrant issued. Remains were found, including a jaw identified by a dentist as that of the lady in question. Drs. Russell and Pattison were brought to trial before the High Court of Justiciary in Edinburgh, but were acquitted because the identification was not entirely satisfactory.

Here is one of the many anecdotes told in this connection:—On one occasion two students went out to the Mearns with a cart and horse to lift a recently buried body. They got the body, propped it up on the seat between them, and drove home to Glasgow. Reaching the toll at Gorbals Brig, one of them dismounted and boldly hammered at the door, while the other remarked to the corpse—"Cheer up! We'll soon be at our breakfast in the High Street." The toll-keeper, unsuspicious, shone his lantern in the disguised corpse's face, and said—"Puir auld body, he's lookin' unco ill; drive canny hame, lads, drive canny!" They did, and soon had the prize safe in College Street.

Limits of space will allow only the briefest reference to the characteristics of medical treatment one hundred years ago. Considering the comparative ignorance of physiology and pathology which prevailed in those days, treatment could scarcely be other than empirical. Everyday practice was apparently still largely dominated by the antiphlogistic system. The text books of the time abound with instances of patients subjected to courses of bleeding, purgation, and mercurial inunction that would exhaust the strongest physique. Some references to the matter may be quoted from letters of the period. One victim writes to a friend that, being unwell, he has had six purgatives in seven days, and can scarcely hold up his head for weakness. Another writes that he has had a cold, and inflammation being suspected he has had "venæsection, blistering, and the antiphlogistic regimen in all its branches;" but in another letter from the same patient, written in 1814, we make the acquaintance of an early heretic in the person of Dr. Swan of Cordale, who prescribes him nourishing food, wine, cold baths, steel and riding exercises, and tells him that he would be better with all his blood in his body.

It would be superfluous to attempt any account of the scientific activities of our medical forbears, as represented in medical journals, clubs, and societies, as this subject has been so fully and interestingly dealt with by Dr. Walker Downie in a recent address.

In concluding these somewhat rambling notes, I would point out that much useful information regarding the medical life of Glasgow in the past may be gleaned, along with a good deal of amusement, from the columns of the newspapers of the day. We seem to be carried back to quite primitive times by an account of a duel fought by two doctors who had had a dispute regarding the treatment of a patient; but this occurred in 1814, and as late as 1817 we hear of a Glasgow surgeon calling out another, but the latter did not respond and was "posted" in the Tontine as a coward. Again, one notices in an issue of the *Glasgow Chronicle* that the Parliamentary intelligence is condensed into a few inches of small print, while the following item of medical interest appears in a prominent and well-spaced paragraph:—"Last week a tape worm, sixteen feet in length, was voided by a boy named John Smith, residing at Broomrig, in the neighbourhood of Dumfries. The child is about eight years of age, and he has been for a considerable time in bad health in consequence of this unwelcome inmate. He has of late been under the medical care of Mr. Threshlie, surgeon, Dumfries, whose success reflects credit on his professional skill."

Turning to the advertisement pages of the same paper we find half-column puffs in praise of "Juniper Essence of Peppermint" for flatulence, gout, hysterics, sea-sickness, mania, and (the old friend of the patent medicine vendor) the relaxation and lassitude arising from the abuse of spirituous liquors; of "Cundell's Improved Balsam of Honey," a positive cure for lung diseases, with an affidavit from a patient snatched from the brink of the grave; and of "Herbert's Roseate Powder," an elegant and innocent preparation which immediately removes superfluous hairs. There is not much evidence here of a change of heart or head in the populace of our city. We have them all still in 1915, the Juniper Essence of Peppermint, the Balsam of Honey, and the Roseate Powder, under different names no doubt, and insinuating themselves into the popular medicine cupboards by more subtle and artistic means; but still the people wish to be deceived, and still the trade is making respectable fortunes for many a man whose ignorance of things medical is only equalled by his commercial astuteness.

HÆMATURIA, A SYMPTOM: ITS CAUSES AND DIAGNOSIS, WITH A FEW CASES ILLUSTRATING SOME OF THE LESS COMMON LESIONS.

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(*Continued from* p. 97.)

(*b*) *Tumours of the kidney* include amongst the commoner growths carcinoma, malignant papilloma, spindle-celled sarcoma, round-celled sarcoma, and amongst the rarer ones angioma, benign papilloma, and epithelioma.

Early hæmaturia from tumour without a palpable swelling in the loin is very difficult to diagnose correctly, and as already pointed out, in angioma and benign papilloma this sign is absent. In malignant disease, however, the most prominent feature of the disease is the increase in the size of the kidney. Albarran and Imbert[10] found a swelling in the renal region in 71 per cent of the cases.

Hæmaturia is the most important and significant symptom of malignant disease, especially cancer of the kidney, and tumours of the kidney are nearly always malignant. It is true various forms of fibromata have been recorded, and occasionally an osteoma, a lipoma, an adenoma, and cases of papilloma have been published from time to time, but they are very rare. In tumours of the kidney hæmaturia takes place in about 25 per cent of cases in children; these are always, or almost always, sarcomata. In adults, about 20 per cent of the cases of malignant disease present hæmaturia as a prominent symptom; these are divided between the sarcomata and the carcinomata. In carcinomata alone 75 per cent of the cases present hæmaturia as a prominent symptom.

Hæmaturia of malignant disease is rarely severe at its early stage, although cases have been recorded in which profuse bleeding occurred at the onset of the disease. As a rule, however, it is only as the lesion advances that the loss of blood attains to such an amount as to form a distinct deposit. When the hæmorrhage has once commenced it soon becomes profuse, is steadily progressive, is less transient than when due to other causes, and is generally spontaneous and continuous, although at intervals liable to aggravation. Clots frequently form, and may cause obstruction to the escape of urine through the ureter, bladder, or urethra.

When the tumour is limited to the substance of the organ, the urine is usually perfectly natural, but when the neoplasm has invaded the pelvis, blood-casts, epithelium, and portions of the growth may appear in the excretion. In the early stage of the disease, however, even before any abnormal constituent can be detected in the urine, the patient may experience considerable difficulty in micturition, probably the result of a reflex nervous excitement. In some cases of malignant disease the hæmaturia is a delayed symptom. This is especially so in cases of sarcomata. An enormous, soft, round-celled sarcoma may exist and develop without hæmaturia or any other disturbance in the secretion indicating the locality of the disease.

Pain is rarely a marked symptom in the early stages of disease of embryonic tumours. Imbert[11] found pain present as the first symptom in 20 per cent of the cases, and Watson and Cunningham[12] "found it the initial symptom in 7 per cent of the cases, and it was present during some stage of the disease in 20 per cent; in 9 per cent it was distinctly mentioned that pain was not present at any time during the course of the disease."

(*c*) *Tuberculous disease of the kidney.*—In this malady the urine presents very marked variations at the different stages of the disease. In the early phases of the affection the presence of the virus induces a congested condition of the organ, and hæmorrhages occur which are analogous to the hæmoptyses in the incipient stages of pulmonary tuberculosis. Kelly[13] states that out of one hundred cases twenty-five complained of the passing of blood, and points out that the appearance of blood may be the first and potent cause of a patient coming to a physician. When the kidney parenchyma and the calyces become more seriously involved, the characteristics of the urine are more distinct, but this is not always the case. The physical characters of the urine are in some instances such that one can with certainty state that the urinary tract is the seat of a tuberculous lesion, while in other cases the excretion may be to no appreciable extent altered from the normal, beyond being of low specific gravity, and containing a trace of albumen.

Before destructive processes commence within the renal pelvis or substance, small quantities of blood may be detected in an acid urine, but when the tuberculous deposit has commenced to break down and evacuate into the ureter, the quantity of albumen is increased, mixed infection is likely to take place, the urine is liable to become alkaline, and, along with greater or less quantity of *débris* of renal tissue, pus appears in considerable quantity.

The albuminuria differs from that of Bright's disease in that the urine is not clear, but contains much mucus, is viscid, cloudy, and opaque, and does not contain tube-casts. The deposit contains small caseous masses mixed with renal *débris*, and on standing, although a considerable amount of pus may be precipitated, a certain quantity remains suspended, and imparts a cloudy appearance to the fluid. The blood is often in small clots, in form comma-shaped.

It is only in rare instances that profuse hæmaturia occurs in renal tuberculosis, and then it is probably due to ulceration of the apices of the pyramids, causing hæmorrhage from the network of anastomosing veins, or the formation of large cavities in the parenchyma.

Trautenroth records the case of a woman, aged 24 years, who was the subject of pulmonary tuberculosis in its early stage, but who also suffered from profuse hæmorrhage from a tuberculous kidney, which necessitated nephrectomy. The pelvis of the kidney was filled with coagulated blood, and upon one of the papillæ a considerable ulcer was discovered. The parenchyma of the kidney was the seat of a diffuse tuberculosis. The urine before the operation was found to contain tubercle bacilli; the patient made a good recovery.

Routier records a somewhat similar case, where the right kidney was the seat of a large tuberculous ulceration. Severe hæmorrhage occurred, and continued during seventeen days, associated with renal colic. On making pressure over the right kidney blood was seen by the cystoscope to escape from the right ureter. The kidney was removed, and the patient made a good recovery.

Although much difficulty is often experienced in distinguishing calculous hæmaturia from that caused by tumours, there is still greater care required in the diagnosis between the hæmorrhage of *early tuberculous* disease and that of renal calculus. The symptoms of the two latter conditions are sometimes identical. This is especially so when the patient fails to show any other evidence of tuberculous disease than that revealed by the renal lesion.

In tuberculous disease hæmaturia is frequently absent for long intervals, is seldom so severe as in stone, and is not increased by exercise. In both conditions pus may be mixed with the urine, but while in the latter concretions and gravel may be discovered, in the former careful and repeated search may demonstrate the presence of tubercle bacilli. In the early stage of tuberculous disease of the kidney the quantity of albumen in the urine is generally in excess of that accounted for by the blood; and in the later stages, when pus appears in considerable quantity, the pus and blood are not so rapidly or so completely precipitated from the urine as in calculous pyelitis. The presence of phthisis pulmonalis, tuberculous disease of bones or joints, of the testicle, the prostate, the vesiculæ seminales, the mesenteric glands, the intestine, or of the lower urinary tract, may give a clue to the cause of the hæmaturia.

(*d*) *Injury.*—In injuries to the kidney blood may be extravasated with or without the addition of urine into the perirenal tissue; the hæmorrhage may be subcapsular, or the blood may escape into the pelvis of the kidney and appear in the urine. This occurs, according to Watson,[14] in 80 per cent of the cases, a series of which he collected. Hæmaturia, even severe bleeding, does not necessarily mean serious injury to the kidney, especially in young persons, as in certain individuals bleeding from the kidney is very easily excited. The younger the patient is the more friable is the kidney.

Case IV.—*Slight injury causing hæmaturia.*

A boy, aged 10 years, the day before admission fell a distance of eight feet, landing on his buttocks, and the same evening the urine contained a considerable quantity of blood, but there was no pain in the lumbar region except on pressure over the right kidney. Cystoscopic examination showed the bladder to be normal, but blood-stained shoots were seen escaping from the right ureter. With complete rest in bed the hæmaturia disappeared in three days. The fall was on soft ground, and caused very little injury otherwise than by producing the hæmaturia. No shadow with x-rays.

Hæmaturia resulting from *injury* is generally easily diagnosed. The history of a lumbar sprain or of a blow or crush on the loin, indicated perhaps by ecchymosis, leads to the suspicion of rupture or contusion of the kidney. Severe damage to the kidney may, however, exist independently of any injury to the other abdominal organs, and may of itself prove rapidly fatal; but in the great majority of cases there is evidence of violence elsewhere, and there are symptoms of rupture of other internal organs, especially of the spleen and liver. Generally, there will be marked and rapid collapse, pain in the course of the ureters as well as in the lumbar region, retraction of the testicle, difficulty in micturition, or even anuria.

The blood appears in the urine within a few hours of the accident, although it may be delayed by clots forming in the ureter or bladder, while the urine, if any is excreted, collects in the perirenal tissue. Hæmaturia may appear and afterwards stop from the same cause, or it may be entirely absent when the rupture of the kidney is extensive. This symptom is, of course, absent when the kidney is torn away from the ureter.

The rarer causes of renal hæmaturia are polycystic kidney, hydronephrosis, and adrenal tumours.

(*e*) *Polycystic kidney* is relatively uncommon, and hæmaturia is not of diagnostic importance beyond the circumstance that often it is severe, and may recur at long intervals and last for only a short time; not frequent, and of long duration as in malignant disease. While in the early stages of the disease urinary symptoms are generally absent, as the disease advances the urine will be found to contain albumen and finely or coarsely granular tube-casts. Hæmaturia is sometimes small in amount, sometimes profuse. Speaking of the urine, Dickinson says—"It is characterised in most cases by the free admixture of blood, often so copious as to call for styptics. Of sixteen cases in which symptoms were present hæmaturia was prominent in eleven; in some it largely contributed to death by the exhaustion it caused; in others, it gave trouble from the formation of coagula."

(*f*) *Hydronephrosis* is seldom associated with hæmaturia unless when the obstruction to the escape of urine is due to the presence of a stone or to torsion of the ureter when the kidney is also movable. Morris[15] narrates a case of hæmaturia in a boy from whom he removed a hydronephrotic kidney, and other instances have been recorded by Allingham, Albarran, Reclus, Israel, and Bangs. The cases in which the writer has seen bleeding have all been cases of transitory hydronephrosis (that is to say, in cases where the ureter was occluded only occasionally), or cases where the distension of the renal pelvis was relieved by a sudden urinary discharge. The sudden relief from pressure probably caused marked hyperæmia of the kidney and the pelvis, and as a consequence bleeding occurred, just as we find in the bladder, when it is over distended and suddenly emptied by catheter.[16]

(*g*) In adrenal tumours hæmaturia is very rare, and is met with under two conditions only—when the growth comes to invade the renal pelvis and when pressure is brought to bear on the renal vein, so causing serious hyperæmia.

According to Ramsay, hæmaturia was noticed twice only in 67 cases, and in both of these the bleeding was really due to associated conditions, cystic formations in the kidney of one, and cauliflower growths in the pelvis of the other. In all the adrenal tumours seen by the writer hæmaturia has been absent. It should be looked upon more as an accident than as a symptom to be expected in adrenal tumours.

Bleeding in Diseases of the Bladder.

(*a*) *Tumours of the bladder.*—Hæmaturia is the cardinal symptom, and the one which first attracts the attention of the patient and leads him to seek advice, and it may be present for a long time before pain is complained of, and by reason of the bleeding being unassociated with pain it is often allowed to go on without a sufficient regard to consequences. The belief that malignant disease is necessarily associated with pain has, unfortunately, got firm hold of the professional mind as well as that of the public. The absence of pain is regarded as a good omen; but the absence of pain, from a diagnostic point of view, is a great misfortune. The most clamant feature of disease is wanting. The patient may be alarmed while the bleeding lasts, but when it stops and there is no pain he is willing to regard himself as cured by some drug he has taken. The bleeding recurs, and is again stopped by the same remedy, and again he is satisfied, whereas if pain was pronounced, as in stone in the bladder, the patient would seek advice and relief from his suffering. In this way the cause of the bleeding would be discovered early, and the surgeon would have an opportunity of rendering assistance. Too often, unfortunately, valuable time is allowed to pass, and the disease is permitted to extend beyond control.

Benign papilloma first shows its presence by hæmaturia in about 90 per cent of the cases; carcinoma in about 70 per cent. In the great majority the bleeding is spontaneous; it has no relationship to exercise or rest; it progressively increases in frequency and amount; the urine colour is bright red; the blood may be mixed with clots, and, as a rule, the quantity is increased towards the end of micturition. When the bladder is irrigated, it is difficult to get the fluid quite clear and free from blood if the bladder is allowed completely to empty itself, but if the bladder is filled and only half emptied, then filled up again, and so on time after time, a clear medium may be obtained for cystoscopic inspection. Instrumental manipulation increases the bleeding. The bleeding is often more profuse in simple papilloma than in carcinoma, and certainly appears at a much earlier stage of the disease, and not uncommonly fatal hæmorrhage may rapidly ensue if the tumour is not removed. Indeed, it is not possible from the amount of the bleeding to judge the nature of the tumour, as often those that bleed most freely are most suitable for operation.

It is impossible to distinguish without the aid of the microscope solitary benign from solitary malignant papillomata, but if the tumours be multiple the gravity of the condition is greatly increased, and if many small warty growths are seen with the cystoscope, the strong presumption is in favour of malignancy.

In the absence of cystitis, pain in the bladder and radiating along the sciatic and anterior crural nerves, not confined to the act of micturition, is a sign of a malignant as distinguished from a benign tumour of the bladder.

The only evidence of tumour furnished by the urine is the discovery of small fragments of the growth; when a characteristic bit is found, the diagnosis of tumour is justified.

It is when tumours of the bladder are discovered early, and prompt action taken, that any good result can be looked for. Hence the urgent necessity of finding at once the cause of the hæmaturia, even although it may be trivial and transitory.

(*b*) *Cystitis.*

1. *Septic.*—In acute cystitis the hæmorrhage is not severe, although almost pure blood may escape at the end of the act of micturition; but in chronic inflammation with ulceration large quantities of blood may be lost, and the blood is intimately mixed with a highly purulent and decomposing urine. Hæmaturia may be present or absent in uncomplicated cases of cystitis, and, as a fact, is not of so great diagnostic value as pyuria. It is important to observe the time at which the blood appears in the stream, and in order to do this it is necessary for the surgeon to see the patient urinate, and to observe whether the colouration is equal during the whole continuance of micturition, or is more abundant at the beginning or at the end of the act. The appearance of blood at the beginning of micturition, the remainder of the flow being clear, may be an indication of two distinct conditions—the disease is either in the prostate, close to the neck of the bladder, or there is a lesion in the urethra.

In simple solitary ulceration of the bladder the bleeding is intermittent in character, and closely resembles the bleeding met with in papilloma.

2. In *exfoliative cystitis*—a severe form of inflammation of the bladder leading to necroses and shedding of the mucous membrane of the bladder—hæmorrhage may be severe and prolonged in consequence of intense bacterial action on the

mucosa, which, on cystoscopic examination, may be found separated in places from the vesical wall and covered with phosphates.

The acute stage of the disease is usually preceded by a chronic cystitis, which shows little tendency to improve under treatment. It is characterised by frequent micturition, tenesmus, severe pain at the end of the act, hæmaturia, generally terminal, but not always so, and occasionally the loss of blood may be considerable, and give rise to the suspicion of tumour. The capacity of the bladder is greatly reduced—to 2 or 3 ounces, or even less. The urine is cloudy, ammoniacal, and contains a large quantity of pus, some blood, and phosphates of lime. On cystoscopic examination the mucosa is seen to be greatly inflamed, covered with irregular masses of granulation tissue, coated with encrustations of phosphates which may form plaques, or the granulations may group themselves into little tumour-like masses topped with a covering of white spongy deposit. Around these plaques or tumour-like masses the mucous membrane is deeply injected, and the least injury causes bleeding.

3. *Syphilitic lesions* are rarely met with in the bladder, and when they do appear the lesions belong to the tertiary period. These ulcers, unless the nature of the disease is recognised, may fail to heal, and cause repeated bleedings, which are, however, seldom severe. The ulceration is generally limited to the base and trigone, and is liable to be mistaken for a tuberculous lesion. The centre of the ulcer is occupied by a greyish-yellow slough, the surface is irregular, the margins sharp and undermined, and surrounded by a deeply congested area.

4. *Tuberculosis* of the bladder is characterised by small bleedings, but as in the large majority of cases the cystitis is due to a descending infection from the kidney, it is impossible to ascertain how far the hæmaturia is due to the renal as distinguished from the vesical lesion. In these tuberculous cases microscopic quantities of blood are found during the entire course of the malady.

In the earlier stages of secondary infection irregular patches of hyperæmic mucous membrane are seen in the trigone or neighbourhood of a ureter orifice, and are covered by greyish-white flakes partly loose, partly adherent to the eroded surface.

In other areas there may be small ulcers, covered by sloughs, while the margins of the ulcer are deeply injected and of a bright red colour. The smaller ulcers may be rounded with minute caseous areas in their centre.

In the more advanced cases of tuberculous disease the whole of the mucous membrane becomes thickened and more or less eroded, the ulceration is widespread, and the ulcers vary much in form and appearance. They are, however, generally rounded and encircled by rings of deeply injected mucous membrane, covered with blood-clot, or by bright yellow sloughs. The necrosed patch may appear of a bright green colour, and have an irregular yellow ring close to its margin. In extreme cases, where a mixed infection has taken place, almost the whole surface of the mucous membrane may be destroyed. In these the bleeding may be constant but is seldom severe, and the urine is always more or less purulent.

(*c*) *Calculus* in the bladder gives rise to two symptoms, pain and bleeding, both of which are increased by movement and relieved by rest, and the blood is most abundant in the last portion of the urine passed. This last characteristic may be observed in cases of prostatic hypertrophy with erosion of the mucous membrane, but in these, in contra-distinction, exercise does not increase the pain and bleeding to any extent.

The amount of bleeding depends upon the condition of the bladder and the nature of the stone. When the stone is smooth and rounded, as in uric acid calculi, there may be no hæmaturia during the whole course of the case; likewise in phosphatic stones where there is bacillus coli infection, the surface of the stone becomes enveloped in a thick coating of mucus which protects the mucous membrane of the bladder from irritation by immediate contact with the stone. Consequently, both bleeding and pain may be absent. It is in mulberry calculus that bleeding is most profuse and pain most severe.

(*d*) *Enlarged prostate,* when uncomplicated by cystitis, vesical calculus, or ulceration, does not give rise to bleeding, except when the increased bulk of the gland has induced a varicose condition of the veins at the base and the neck of the bladder; but, as a consequence of this, profuse and repeated hæmorrhage may occur, and sometimes it may be so severe as to demand immediate operation. More commonly it is small in amount and painless, and almost all the blood is contained in the portion of the urine passed at the end of micturition or drawn off with the catheter. The bleeding does not occur while the bladder is filling, only when it is nearly empty. When, however, the obstruction to the escape of urine is great, the venous congestion may become very marked; then hæmaturia becomes a grave symptom, and, if the patient's life is to be prolonged, demands prompt operative treatment.

In some lesions of the prostate the blood may pass into the urethra and accumulate there; on the other hand, in lesions of the first portion of the urethra the blood may flow backwards into the bladder and mix with its contents. When the blood originates in the urethra and accumulates there, or when it escapes from the prostate and flows into the urethra, the hæmaturia is limited to the beginning of micturition, but if the quantity of blood is great, and if it flows backward into the bladder and mixes with its contents, then the whole of the urine becomes more or less coloured. Again, in a lesion at the neck of the bladder the hæmaturia is not limited to the beginning of micturition, but blood is also observed to escape at the end of the act. This is easily explained—between the acts of urination the blood accumulates in the urethra or close to its internal orifice, and is expelled with the first few drops of urine only, that following being clear; but again, before complete contraction of the bladder occurs a fresh hæmorrhage is induced, which shows itself in the urine last ejected.

(*e*) *Varicose veins* in the trigone of the bladder may give rise to hæmaturia very similar to what is observed in vesical papilloma, but curiously it is a condition which has attracted very little attention from the surgeon or the urologist. Indeed, the disease has been almost entirely overlooked. This could be easily understood in the days when the cystoscope was seldom employed, but now that the instrument is used by all urologists and by many surgeons it is remarkable that hardly any cases have been published. To draw attention to the lesion it may be well to record one case.

Case V.—*Moderate symptomless hæmaturia for three years. Supposed to be due to papilloma, operation recommended. Cystoscopic examination upset previous diagnosis and proved bleeding to be due to varicose veins in trigone.*

A. C., aged 60. First noticed red colouration of the urine in March, 1903, which lasted only for a few hours. The blood was well mixed with the urine and the terminal portion was not more deeply stained than the rest. During the following eighteen months he had eleven distinct hæmaturias, and in October, 1904, the bleeding was more copious than on any previous occasion. The appearance of blood in the urine was the only symptom. No frequency, no pain, and no deposit in the urine except the blood. Being alarmed, his medical adviser recommended a consultation with a surgeon, who came to the conclusion that the hæmaturia was due to a tumour in the bladder, and he advised operation. The patient was very averse from following this advice and I was asked to see him. On cystoscopic examination I found that on the base of the bladder there were three large varicose veins, but otherwise the bladder was strictly normal. This examination was made while there was no bleeding going on, and I advised another examination to be made during hæmaturia. An opportunity offered about a month later, when blood was seen slowly oozing from one of the distended veins. On enquiry I learned that the patient when he did not get plenty of exercise was greatly troubled with constipation, and it was usually at those times that the bleedings occurred. Examination of the rectum revealed the presence of internal hæmorrhoids. These were treated by cauterisation, and since then the bowels have been carefully regulated, with the result that only on three occasions during the four following years a trace of blood was seen in the urine.

Attention was directed to this lesion in an article in the *Practitioner*,[17] and the following remarks were made:—

“Varicose veins occupying a portion of the trigone of an otherwise healthy bladder, and giving rise to occasional hæmaturia unaccompanied by any other symptom. The patient was a man, æt. 43, who, prior to consulting me, had noticed that occasionally, during the previous eighteen months, a few drops of blood-stained urine escaped at the end of the stream. This alarmed him, and, being anxious to find an explanation, he asked for a cystoscopic examination. On inquiry I found that he also suffered from internal hæmorrhoids and habitual constipation. The hæmorrhoids were removed, and the constipation remedied, and within two months the hæmaturia disappeared. This is one of the rarest causes of hæmaturia. Dilatation and varicosity of the veins of the bladder occur seldom, and then almost only as a consequence of obstruction to the blood flow by pressure from constipation or tumours."

(*f*) *Diverticulum of the bladder* is sometimes marked by hæmorrhages, and the loculi may be seen filled with blood clot. On these occasions the bleeding is due to the rupture of a varicose vein in the pouch. This condition is not common, although diverticulum of the bladder is frequently met with in urological practice.

The methods employed in making a diagnosis are:—

(*a*) *Physical examination of the urine and the circumstances connected with the presence of blood in the evacuation.*—The following questions must be inquired into and answered:—What is the colour of the blood? Is it intimately mixed with the urine, and is the whole stream equally colourised? Is the quantity of blood augmented by exercise or diminished by rest? Have clots been seen, and what is their form? Are there tube-casts or blood-casts to be discovered, or are there other deposits found in the urine? Are the attacks frequently repeated and of short duration, or are they protracted?

The colour imparted to the urine by the addition of blood varies greatly in intensity and shade, from a pale rose colour to a bright red, like red-currant syrup mixed in water, to a dark red, to a colour simulating porter, or to a brown colouration not unlike coffee. As a general rule, however, it may be stated that the freer the urine is from other morbid materials, such as organisms or chemical deposits, and the nearer the source of hæmorrhage is to the external orifice of the urethra the less is the blood altered in appearance. Sometimes, however, as in cases of tumour of the kidney, the quantity of blood derived from the organ may be so large in amount, and may be expelled so rapidly after it has escaped from the vessels, that little change may be observed in its colour. Again, in some cases of rupture of the kidney from direct violence, the urine may be of a bright red colour, the blood having undergone very little change; but if there is no history or symptom pointing to tumour of the kidney or to rupture of the organ from injury, the above statement may be accepted as correct. On the other hand, when the hæmaturia is of vesical origin, the first quantity of urine passed may present a normal appearance, especially if the patient has been for some time at rest in a recumbent posture, and the urine is passed while the patient is in bed. In such circumstances, as the bladder empties itself, the urine gradually becomes more and more tinged, till, finally, the last drops evacuated may be almost pure blood. This is to be especially noted in cases of tumour of the bladder and of vesical calculus, also in passive hyperæmia of the bladder. In passive hyperæmia probably the engorgement of the vesical veins is greatly augmented during the process of muscular contraction, the efflux trunks being compressed by the muscular trabeculæ through which they pass on their way to join the plexus of veins on the serous surface of the bladder. When the bladder is moderately full the veins are distended and gorged with blood, but when an expulsive effort is added to the already considerable tension the weak capillary walls give way, and there may be considerable oozing of blood from the mucous surface without the appearance of any gross lesion when the bladder is examined with the cystoscope. As a general rule, in hæmorrhage from the bladder the urine is mixed with a considerable quantity of mucus, and is of a bright florid colour; but if long pent up in the viscus it may assume a dark colour dependent upon the reaction of the urine, which in such cases is usually alkaline. When due to vesical calculus the hæmorrhage is increased by exertion, and in cases of tumour of the bladder the bleeding is always worse after an attempt has been made to examine the bladder by instruments. When the blood is from the kidneys or the ureters it is generally intimately mixed with the urine, to which it imparts a dark, smoky colour, unless when the blood issues in considerable quantity from the pelvis of the kidney and flows rapidly along the ureter, distends the bladder, and escapes without undergoing much change. While it is true that usually blood of renal origin is freely mixed with the excretion, which presents a smoky or coffee colour, too much importance must not be attached to these appearances, as they do not depend so much upon the source of the blood as upon the reaction of the urine itself, as seen, for example, in cases of enlarged prostate and chronic vesical catarrh.

Blood having escaped from the vessels, its fibrous constituents may coagulate into firm clots, which, during their formation, may entangle some of the histological elements of the structures in which they lie, or by their firm appearance, form, or bulk may indicate the source of the hæmorrhage. Clots are seldom noticed in the urine unless in cases of abundant hæmorrhage; they may be few in number, or numerous; generally they are soft in consistence, and when small in size they may be dissolved in the urine, and consequently, if not looked for immediately after micturition, they may be lost. The form of the clot may be ovoid, or may be long or worm-shaped, or may resemble in appearance a well-gorged leech. As to colour, they are generally dark red, but may vary considerably, sometimes being black, bright red, or they may become partly or wholly discoloured—spotted red in a greyish background or entirely grey. These clots, when adherent to the bladder wall, are liable to be mistaken for a tumour, but error may be avoided by making a second examination. When the clot is large, the hæmorrhage is usually, but not invariably, from the bladder; the clots may be so huge that they cannot pass along the urethra without being broken up either by the repeated contraction of the bladder or by means of instruments. These clots are generally very irregular in form and size; they may be so large as to be described by the patient as like masses of liver; but here again a conclusion must not be drawn from the size and appearance of the clot.

It is generally said, and probably truly said, that these large masses of blood-clot are due to a vesical lesion, but many cases have been recorded where large clots have been formed in the bladder and evacuated where the hæmorrhage has been clearly due to a renal lesion (Case III). The coagulum may make a complete cast of the pelvis or of the calyces. Rounded clots corresponding to the diameter of the ureter may escape, or leech-like ovoid casts may be taken of the first part of the urethra, or long bougie-like coagula from its anterior part. While the presence of considerable clots is usually, though not always, conclusively against the idea of the hæmorrhage being from the secreting substance of the kidney, the absence of clots visible to the eye proves nothing. If the passage of a long worm-shaped blood-clot is preceded by a temporary cessation of the hæmaturia, and its escape followed by a recurrence of the bleeding, this proves almost to demonstration that the clot has been plugging one ureter, and if, in addition, the clot is of such a size as to support the idea of being a mould of the ureter, the evidence is conclusive as to the source of the hæmorrhage. The hæmorrhage has been from the kidney, and blood has coagulated in the ureter and has completely plugged it; the coagulum has then become shrunken, while, at the same time, an accumulation of urine has taken place in the pelvis and caused dilatation of the ureter until a point has been reached where the onward pressure from above has become so great that the clot has been forced out into the bladder along with an accumulation of blood-stained urine.

The microscopic appearance of these clots varies according to their age and the changes they have undergone since coagulation has occurred. If the clot is freshly formed, the blood corpuscles present practically a normal appearance, and are seen to be well coloured and embedded in an amorphous or slightly granular matrix of fibrin; but if the clot be old, and especially if it be small in size, the hæmoglobin will be seen to have dissolved out, and the red blood corpuscles to be represented only by little colourless rings from 3 to 5 micromillimetres in diameter. These fragments of discoloured coagulated blood have sometimes been mistaken by microscopists for portions of tumours. The size of the cells, however, and the absence of nuclei, as well as the behaviour of sections when acted upon by staining agents, clear up the diagnosis.

In certain cases, on examination with the cystoscope, one ureter may be seen to be blocked by a coagulum which protrudes from the orifice of the ureter and hangs into the bladder, not unlike a small worm hanging from the end of a fishing hook. It is generally of a dark reddish-grey colour and firm consistence. In a case observed by the writer, the clot was so firm that the movements of the cystoscope disturbed it, and its dislodgment was immediately followed by a copious flow of blood from the previously obstructed ureter.

In hæmaturia from the parenchyma of the kidney minute coagula, casts of the uriniferous tubules, may be discovered in the urinary sediment, and may give evidence by their form and shape whence they are derived. In this form of hæmaturia the number of blood corpuscles is no criterion of the quantity of albumen in the urine, whereas in hæmorrhage from the conducting or collecting portions of the urinary tract, provided there is no pus in the urine, the number of red corpuscles or the amount of hæmoglobin may be accepted as the measure of the quantity of albumen contained in the excretion.

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[13] *Diseases of the Kidneys, Ureters, and Bladder*, New York, 1914, vol. ii, p. 59.

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[15] *Lancet*, 1894, vol. i, p. 205.

[16] *Med. News* (New York), 1905, vol. lxxxvi, p. 253.

[17] Newman, "The Teaching of Cystoscopy," *Practitioner*, July, 1905.

(*To be continued.*)

SOME OBSERVATIONS ON THE USE OF PITUITARY EXTRACT IN OBSTETRIC CASES.

By WM. D. MACFARLANE, M.B., C.M., F.R.F.P.S.,
Professor of Midwifery in the Anderson College of Medicine; Surgeon to the Royal Samaritan Hospital for Women.

During the past few years the extract of the infundibular substance of the pituitary gland has been used to excite and strengthen uterine contractions during labour.

Fraenkl-Hochwart and Froehlich observed uterine contraction in the rabbit resulting from the use of this substance, and Hofbauer was induced, as a result of the work of these observers, to use it as a means of promoting stronger and more frequent uterine contractions during labour. Numerous reports from Continental and Amèrican obstetricians have confirmed the work of those who first employed it in obstetric practice, and have determined the limits of its usefulness and given timely warning of the dangers attending its indiscriminate use.

My observations regarding its use in obstetric cases are confined to fifty cases which have occurred in my practice during the past few years.

The preparations which I have employed have been the "Infundin" of Burroughs Wellcome & Co., and "Pituitrin" of Parke, Davis & Co. I have found them to be serviceable and reliable, the dose employed being from ½ to 1 c.c. injected intramuscularly either into the arm or buttock, and repeated if necessary. Normal labour should absolutely exclude its use. The indications for its employment have been—

1. In *primary uterine inertia* one must be absolutely certain that labour has begun, and not be tempted to use this substance on the occurrence of slight and premonitory uterine contractions. The extract has little or no power of initiating contractions. Further, the cervix must be dilated or easily dilatable.

2. In *secondary uterine inertia* one finds the greatest usefulness of this preparation. In practice one frequently finds the uterine contractions lessening during the expulsive period, and

consequently there is frequent recourse to forceps extraction. The use of pituitary extract will very often obviate such operative interference, and likewise quickly terminate a second stage of labour, provided there is no undue obstruction.

3. In *post-partum hæmorrhage* it has been employed as a preventive where such hæmorrhage was feared. Some authorities question its superiority to ergot; others combine it with ergot hypodermically. It is stated that pituitary extract causes more frequent uterine contractions; ergot and its preparations only strengthen the individual contractions. My observations lead me to believe that a full dose (1 c.c.) of either "Pituitrin" or "Infundin" causes marked uterine contraction of a prolonged nature, and scarcely admitting a uterus to bleed. One must always remember that severe bleeding may take place from a lacerated cervix, and yet the uterine body be firm and hard as stone. It has also to be borne in mind that there is greater bleeding during the third stage—or rather immediately after the expulsion of the placenta—if either of these preparations have been employed early in labour, but this can be controlled by giving an injection of ½ c.c. immediately after the expulsion of the placenta.

4. In *abortion cases* or in the *induction of labour* these preparations do not begin contractions, but after free dilatation of the cervix by the bag or other dilator, uterine contractions having been started, the pains become stronger.

The following contra-indications to the use of pituitary extract during labour should be carefully borne in mind:—

1. Anæmic patients sometimes become suddenly blanched and faint after its use. This I have noticed on three occasions, and it caused considerable alarm.

2. In stout, flabby patients I have seen the condition noted in No. 1—probably due to some altered muscle condition of the heart.

3. Chronic kidney affections and arterio-sclerosis are distinct contra-indications—at least considerable caution is necessary in all cases of high tension pulse.

4. Marked pelvic contraction prohibits its use.

5. A rigid and not easily dilatable cervix should constitute a distinct contra-indication. Severe laceration of the cervix and rupture of the uterus have been reported from the

injudicious use of these preparations ("Pituitrin" and "Infundin").

6. If very violent uterine contractions are caused by the injection there may be danger to the fœtus, and chloroform anæsthesia may be required.

I have seen two children born markedly asphyxiated, there being no other apparent cause than the use of the extract. I administer chloroform to my obstetric cases in the later periods of the second stage, and find that uterine contractions which have been stimulated by pituitary extract become less severe but not less frequent.

My experience with "Pituitrin" and "Infundin" leads me to believe that we have a powerful obstetric aid in cases of delay, but that great care and judgment must be used in its administration. Further, as the action of the drug lasts from half an hour to forty minutes, it requires to be repeated in many cases; as much as 7 c.c. have been given during twenty-four hours without any untoward effects, and with no evidence of toxic symptoms. I have observed even ½ c.c. dose produce very strong uterine contractions. Attention to the fœtal heart sounds is a wise observance. The most marked benefit from this drug has been, in my experience, during the second stage, and if used during the first stage the cervix should be easily dilatable.

Where the uterus has been "played out" it must be rested before this drug is given. There is considerable difference of action in individuals, and consequently one must go cautiously in the matter of dosage; it is better to begin with a small dose and repeat it frequently, if desired. It seems to me that by the judicious use of this drug the injudicious and reckless use of the forceps may be obviated. Several of my cases which seemed to indicate forceps extraction were terminated after a full dose of the pituitary extract. To the busy practitioner, who is tempted to save his time by forceps extraction when there is some delay in the expulsive stage, there is in the use of either "Pituitrin" or "Infundin" a fairly reliable method of obviating laceration by instrumental procedure, of lessening the risks of infection and consequent morbidity, and at the same time hastening the delivery when it is thought right to do so.

Obituary.

ON SERVICE.

Lieutenant GEORGE M'CALLUM, M.B., Ch.B. Glasg., Royal Army Medical Corps.

We regret to announce the death of Lieutenant George M'Callum, R.A.M.C., attached to the 6th Duke of Cornwall's Light Infantry. Lieutenant M'Callum, who was 25 years of age, was a son of Councillor John M'Callum, Paisley, where the earlier years of his education were spent. Coming to Glasgow he became a pupil of the High School, and afterwards proceeded for the study of medicine to Glasgow University. He took the degrees of M.B., Ch.B., in 1914, graduating last August at the first of the special graduation ceremonies held since the outbreak of war. Before joining the R.A.M.C., which he did in January, he acted for a time as resident physician in the Royal Alexandra Infirmary, Paisley. He went to the front in April, and, as was intimated in a casualty list dated 1st August, he was killed in action in France on 31st July.

MILDRED SIMS, M.B., C.M. Glasg., London.

We regret to record the death, at her residence in London, of Mildred Sims, M.B., C.M. Born in Ipswich, the second daughter of R. C. Ransome, J.P., she came to Glasgow in 1890, and shortly afterwards entered Queen Margaret College, where she was one of the earliest students of medicine. She took the degrees of M.B., C.M., in 1896, and afterwards continued her medical studies in Dublin and in Paris. She returned to take up a post as resident assistant in the Royal Asylum, Gartnavel, being the first woman to hold the post. In 1898 she married the late John Dillwyn Sims, of Ipswich, where she took up private practice. She took an active interest in public affairs, was for some years a member of the Board of Guardians, and was specially interested in the welfare of women and children in the town. For many years, while resident in Ipswich, she held appointments in various London hospitals, travelling to and fro to attend dispensaries, &c. She disposed of her practice in 1911 and settled in London, where she continued to take a great interest in medical work. She completed the work necessary for the D.P.H., and held various appointments under the London County Council. For the last six months she was entirely laid aside by an illness which ended fatally on 7th August. She is survived by two children, a girl and a boy. She is regretted by a wide circle of friends, to whom her strong personality and sterling loyalty made her very dear.

JAMES WARDROP, L.R.C.P. & S.E., L.R.F.P.S.G.,

CROSSHILL.

We regret to announce the death of Mr. James Wardrop, which occurred on 12th August at his residence in Crosshill. Mr. Wardrop, who took the Triple Qualification in 1891, having studied at Anderson's and St. Mungo's Colleges, had practised in Crosshill as a homœopath for the long period of forty-five years. He thus stood for much in medicine to which the profession as a whole is opposed; but we would not willingly let slip the occasion of bearing tribute to his high personal worth, to his enthusiasm in philanthropic work among the sick and poor, and to the courtesy and kindliness of heart which made him both to high and humble a true friend. The esteem in which he was so widely held was manifested in the large congregation which attended the public memorial service held in Wellcroft Halls, where feeling reference was made to his long philanthropic endeavour. He died at the advanced age of 87, and is survived by a son and daughter.

CURRENT TOPICS.

Appointments.—The following appointments have recently been made:—

A. J. Ballantyne, M.D.Glasg. (M.B., 1898), F.R.F.P.S.G., to be Lecturer on Ophthalmic Medicine and Surgery in the Anderson College of Medicine.

J. M. Barbour, M.B., C.M.Glasg. (1887), to be Civilian Medical Officer to the 2/4th King's Shropshire Light Infantry, stationed at Ramsey, Isle of Man.

C. Court, M.B., C.M.Glasg. (1885), to be Certifying Factory Surgeon for the Kirkham District, co. Lancashire.

E. B. Jago, M.B., C.M.Glasg. (1896), to be Medical Officer of Health to the Greasborough Urban District Town Council.

Royal Navy (20th July): Temporary Surgeon C. R. T. Thomson, M.B., Ch.B.Glasg. (1915), to *Swiftsure*, to date 19th July.

23rd July: Staff Surgeons C. Ross, M.D.Glasg. (M.B., 1905), to *Pembroke*, additional for disposal, undated; L. L. Greig, M.B., Ch.B.Glasg. (1905), to *Attentive*, to date 22nd July. Temporary Surgeon R. Tennent, M.B., Ch.B.Glasg. (1914), to *President*, additional, to date 21st July.

6th August: Temporary Surgeon J. C. Watt, M.B., Ch.B. Glasg. (1913), to *Pembroke*, additional for disposal.

16th August: Temporary Surgeon H. S. Martyn, M.B., Ch.B. Glasg. (1902), M.A., to *Vivid*, additional for Plymouth Hospital, to date 23rd August.

Royal Army Medical Corps (17th July): To be temporary Lieutenants—Dated 28th June, 1915: T. L. Fleming, M.B., Ch.B.Glasg. (1911). Dated 1st July, 1915: D. C. M'Ardle, M.B., Ch.B.Glasg. (1908); T. Marlin, M.D.Glasg. (M.B., 1909); A. Shearer, M.B., C.M.Glasg. (1894); R. W. Valentine, M.B., Ch.B.Glasg. (1901); A. G. W. Thomson, M.B., Ch.B.Glasg. (1910); R. Clark, M.B., Ch.B.Glasg. (1910); J. P. Duncan, M.B., Ch.B.

Glasg. (1900), B.Sc.; W. G. Shand, M.B., Ch.B.Glasg. (1903); H. Quigley, M.B., Ch.B.Glasg. (1914).

21st July: To be temporary Captain—temporary Lieutenant R. R. K. Paton, M.B., Ch.B.Glasg. (1910).

24th July: J. Keay, M.D.Glasg. (M.B., 1881), to be temporary Lieutenant-Colonel while employed at the Edinburgh War Hospital.

26th July: To be temporary Lieutenants—A. S. Richmond, M.B., Ch.B.Glasg. (1911); D. S. Macbean, M.B., Ch.B.Glasg. (1914); T. Divine, M.D.Glasg. (M.B., 1892); A. Robb-Smith, M.B., C.M.Glasg. (1892); R. W. Sutherland, M.B., Ch.B.Glasg. (1909); T. M'Cosh, M.B., Ch.B.Glasg. (1905); W. Clow, M.B., C.M.Glasg. (1895).

30th July: To be temporary Lieutenants—B. Blacklock, M.D.Ed. (Baillieston); A. Climie, M.B., Ch.B.Glasg. (1914); H. W. Dyke, M.B., Ch.B.Glasg. (1905).

7th August: To be temporary Lieutenants—W. H. M'Walter, M.B., C.M.Glasg. (1892); T. D. Moffat, M.B., C.M.Glasg. (1890).

10th August: To be temporary Lieutenants—Lieutenant A. Peden, M.B., Ch.B.Glasg. (1912), Royal Field Artillery (T.F.); D. Renton, M.B., Ch.B.Glasg. (1907); N. Macleod, M.B., Ch.B. Glasg. (1914); J. R. M'Vail, M.B., Ch.B.Glasg. (1904); C. L. Miller, M.B., Ch.B.Glasg. (1910); J. Cook, M.B., Ch.B.Glasg. (1908); D. Glen, M.B., C.M.Glasg. (1894); A. Patrick, M.D.Glasg. (M.B., 1908); W. C. Burns, M.D.Glasg. (M.B., 1897).

11th August: To be temporary Lieutenants—D. G. Gardiner, M.B., Ch.B.Glasg. (1915); J. R. Bryce, M.D.Glasg. (M.B., 1889).

12th August: To be temporary Lieutenants—A. Chalmers, M.B., C.M.Glasg. (1892); P. J. Kelly, M.B., Ch.B.Glasg. (1906).

Territorial Force (26th July): Attached to units other than medical units—A. Jubb, M.D.Glasg. (late Lieutenant, 1st Lowland Field Ambulance), to be Lieutenant.

27th July: 3rd Scottish General Hospital—J. Patrick, M.B., C.M.Glasg. (1893), F.R.C.S.E., to be Captain, whose services will be available on mobilisation.

Scottish Command Orders (16th August): The undermentioned gentlemen have been appointed Civilian Medical Practitioners in charge of troops at the places mentioned:—J. B. W. Cook, M.B., Ch.B.Glasg. (1901), Alexandria; H. Miller, M.B., Ch.B.

Glasg. (1899), Hamilton; G. G. Bannerman, M.B., C.M.Glasg. (1885), Hawick; J. Graham, M.B., Ch.B.Glasg. (1904), B.Sc., Langside; Miller Semple, M.B., C.M.Glasg. (1884), Dennistoun; J. G. Ronald, M.B., C.M.Glasg. (1892), Larbert; D. G. Dingwall, L.R.C.P. & S.E., L.R.F.P.S.G. (1902), Alloa; T. Watt, M.B., C.M. Glasg. (1886), Paisley.

SANITATION OF GLASGOW.—In the recently issued report of the Sanitary Department for 1914, Mr. Peter Fyfe, Chief Sanitary Inspector of Glasgow, deals with a wide variety of subjects. Among them is the problem of sanitation and housing presented by the Cowcaddens Ward, the most overcrowded in the city, since it has a population of about 34,000 upon 158 acres of land, or 215 to the acre. That, he says, is quite beyond a reasonable number, and would seem to demand some well thought out measure having for its aim a gradual reduction of the congestion. During the year 1914 a beginning was made upon some of the darker spots, where insanitary buildings were closed under the provisions of the Housing and Town Planning Act; but there are others still awaiting condemnation and demolition. He expresses the hope that those which have been destroyed may not be reconstructed, but that the vacant ground may either remain vacant or bear upon it buildings "devoted to the cleanliness or elevation of the citizens." Of the 600 dwelling-houses in Glasgow certified under the Act as unfit for human habitation, 128 were in the Cowcaddens Ward, where there are still a considerable number of very unsatisfactory houses which cannot at present be dealt with owing to legal difficulties.

Turning to the subject of imported foodstuffs, the report shows that the total quantity for the year 1914 was 519,206 tons, an increase of 129,491 over the previous year. Of this large total only some 130 tons, or 0·025 per cent, were found to be unwholesome, and were subsequently destroyed. It is satisfactory to know that the proportion of unsound food represents so small a fraction of the whole.

The report goes on to consider the various sources of possible contamination of milk, and suggests that clauses providing further safeguards be added to the new bye-laws at present under consideration. The attention of the department has been specially given to the "fly nuisance," and its efforts to discover the breeding-places and to destroy the eggs and larvæ of the flies have met with considerable success. Meteorological conditions in the summer of 1914 were favourable to the propagation of flies, but their presence was distinctly less marked than in former years. In certain untraced outbreaks and sporadic cases of infectious disease they had doubtless acted as carriers of the contagion. Although the public mind is slowly awakening to their potentialities in this direction, the incomprehensible apathy of a number of milk dealers to the danger renders them unsuitable persons to carry on such a business.

PROPOSED SANATORIUM AT SOUTHFIELD.—At a recent meeting of Glasgow Corporation the scheme to provide a sanatorium at Southfield was under consideration. The Health Committee, in view of a recommendation from the Local Government Board that no new contract or other undertaking for the erection of tuberculosis institutions which would involve capital expenditure should be proceeded with meantime, recommended the Council to postpone the scheme, and this was agreed to by 37 votes to 15. In the course of the discussion, Bailie James Stewart, speaking against the proposed postponement on the ground of its forming a danger to the public health, said that in Glasgow 3,148 consumptives were at present living at home, more than 2,200 of them in single apartment or two-roomed houses, and against that they had only a total of 700 beds for hospital treatment. At the end of the war they would have a large number of soldiers coming home suffering from phthisis in consequence of their hardships. In camp life at home the disease was also developing, and they had at present in Glasgow, under the charge af the tuberculosis department, twenty discharged soldiers from the camps of this country.

While Bailie Stewart's figures with regard to the prevalence of consumption in the civilian homes of Glasgow are doubtless irrefutable, it is permissible to think that he has overstrained the argument from the military conditions. The open-air life of warfare, in spite of its hard physical labour, is not favourable to the development of phthisis in persons previously uninfected. Cases with slightly developed physical signs may undoubtedly pass the doctor in the course of a rapid examination and be admitted to the ranks; but these will not all be adversely affected by the conditions of warfare. To some the severe strain will prove deleterious, particularly, it may be assumed, to those with a tendency to hæmoptysis; but to others, the open-air life, the abundant nourishment, and the state of "fitness" induced by healthy exercise, coupled, it may be, with removal from the adverse circumstances of life in a crowded "back-land," will prove—and have proved in other wars—the actual means of salvation. Bailie Stewart's own statement, that twenty discharged soldiers from the camps of this country were at present under the charge of the tuberculosis department, would seem to bear out this view rather than his argument. In the great numbers of those who have enlisted from Glasgow, far more than twenty, it must be assumed, must have passed into the army, however careful may have been the examination, with undetected incipient phthisis. That only twenty have been discharged unfit is an inferential proof of the benefits conferred upon many others by military life.

Medical Inspection of School Children.—Dr. Ernest T. Roberts, chief medical officer, Glasgow School Board, in his report on the medical inspection of children for the year ended 30th June last states that the estimated number of children on the registers was 127,000, and that the estimated average attendance was 110,000. The number of visits paid to schools by the whole-time and part-time medical officers for the systematic examination in accordance with the scheme of inspection was 3,296. The number of special visits paid by the chief medical officer for purposes other than those of systematic inspection was—(*a*) To schools, 351; (*b*) to homes, 177; (*c*) to treatment centres, 55. The total numbers of children examined were 15,162 boys and 13,627 girls. The numbers notified to parents as suffering from defects were 4,390 boys and 5,874 girls. During the session 1913-14 thirteen centres for the supplying of dinners to necessitous children were opened, and 68,930 dinners were supplied. Clothing (in some cases boots only) was supplied to 2,527 children. There were thirty centres at which defective children were being educated at the end of the school year (June, 1914), and the numbers on the roll were —physical defectives, 1,387; mental defectives, 1,136. The total number of cases transferred from the schools for physical defectives to the ordinary schools from 1st July, 1913, to 30th June, 1914, was 332.

The report also deals with eyesight inspection, classes for blind children, classes for semi-deaf and semi-mute children, classes for young deaf children, arrangements for physical education and personal hygiene, and the medical and dental treatment of school children.

PUBLIC HEALTH OF GREENOCK.—In his report for the past year, issued on 6th August, Dr. Wm. S. Cook, Medical Officer of Health for the Burgh of Greenock, states that, in his opinion, the population as estimated by the Registrar-General is distinctly below the actual figure, which he puts at 85,000 (including the shipping and military population), as against 77,642. According to his estimate the birth-rate is 29·85, the death-rate 16·48, and the phthisis death-rate 0·917. This phthisis death-rate is the lowest yet recorded in Greenock, and the notifications of the disease show a considerable falling-off. As compared with the previous year, the birth-rate is higher, the corrected death-rate slightly lower. The area of the burgh is 2,945 acres, and the density of the population 26·43 persons to the acre. The illegitimate birth-rate is 4·4 per cent, against 4·7.

On the subject of housing the working classes, Dr. Cook says that it is a great misfortune that the proposed scheme for building two-apartment houses and a small proportion of one-apartment houses on a central site was delayed during the spring and summer owing to the Local Government Board inquiry till the onset of the European War, as this has led to a serious delay and handicap in the solution of the most urgent part of the housing problem in Greenock, namely, the provision of shelter for families at present occupying houses scheduled under the Housing Acts. These houses are utterly unfit to live in, and the occupants are placed in conditions such as to be dangerous to themselves and to the community. The Corporation should have their hands full for some years to come in providing for the bare necessities of the labouring classes. They should, at the same time, do everything in their power to stimulate and encourage private building for the benefit of the artisan class who can afford to pay economic rents. He was of opinion, after careful consideration, that the best way to do this would be by the preparation of town planning schemes for suitable areas.

THE PARASITE OF BILHARZIOSIS.—The missing stage in the development of *Bilharzia hæmatobia* formed the subject of a recent communication to the Royal Society of Medicine by Lieutenant-Colonel R. T. Leiper, who narrated the results of his investigations conducted in Egypt since January of this year. The parasite, as is well known, enters the human host through infected water, and it has been surmised that entrance is effected through the skin; but before Colonel Leiper's researches the intermediate host had not been discovered. This, it now appears, is a small mollusc with a shell like that of a snail, which inhabits ponds and small canals where there is vegetation. It is infected by the ova passed in the urine or fæces of the human host, these ova undergoing in the mollusc a process of development through which, at the end of six weeks, the parasite assumes a form capable of penetrating the human skin. The molluscs remain permanently infected. It is evident that filling up the pools will cause their destruction, and, with the disappearance of the intermediate host, the parasite will no longer be able to complete its cycle of development.

The discoverer, Colonel R. T. Leiper, is a native of Kilmarnock and a graduate of Glasgow University, where he took the degrees of M.B., Ch.B., in 1904, and that of D.Sc. in 1911. His first research, conducted at the Millport Marine Station while he was still a student, dealt with a parasite of the sea-urchin bearing some relation to *Bilharzia hæmatobia*. He was a University research student, and after graduation a Carnegie research student in embryology. With Dr. Gemmill, of the embryological laboratory of the University, he worked upon material brought back by Dr. W. S. Bruce from the Scottish National Antarctic Expedition. In 1906 he was appointed lecturer in helminthology at the London School of Tropical Medicine; in 1909 he was helminthologist on the Grouse Disease Inquiry Committee; and he has made numerous expeditions to West Africa, Egypt, East Africa, and China.

To him is due our complete knowledge of the life-history of the guinea-worm and of the parasite of Calabar swelling. It is evident that his latest discovery is one of far-reaching importance, and that it may be expected to have a material influence to the benefit of the many troops who pass through or are quartered in Egypt.

PRESENTATION TO DR. ROBERT SINCLAIR, DUNDEE.—On the occasion of his retirement from professional life, a large company of the prominent citizens of Dundee met in the Town Hall on 10th August to do honour to Dr. Robert Sinclair, M.D., LL.D. Ex-Lord Provost M'Grady presided, and, in the name of the subscribers, Sir George W. Baxter presented Dr. Sinclair with a silver tray, bearing an inscription, and with deposit receipts for £1,000. He said he could pay no higher compliment to him than this, that he believed the opinion of the citizens of Dundee, and the opinion of the medical profession in Dundee and far beyond Dundee, was that Dr. Sinclair was an honour to an honoured profession. Dr. Sinclair, in returning thanks, said his life in Dundee had been one of activity, happiness, and, he hoped, of some measure of usefulness. He had had great pleasure in his professional and public work, and had been fortunate enough to maintain all his life most friendly relations with his professional brethren. It had been his privilege to witness and to take some part in some important changes for the welfare of the community. The Chairman said that Dr. Sinclair's services had been of outstanding value to the sick and suffering in the community.

Dr. Sinclair is a native of Glasgow, and studied medicine at Glasgow University, where he took the degrees of M.B., C.M., in 1871, and that of M.D. in 1879. He was distinguished among his fellow-students, and was president of the University Medico-Chirurgical Society. After graduation he acted as house surgeon in Glasgow Lock Hospital and as assistant pathologist to Glasgow Royal Infirmary. On settling in Dundee he speedily attained to a position of honour and of influence, indicated to some degree by the numerous appointments which have fallen to his lot, and more adequately by the words of Sir George Baxter. He has been a physician to the Dundee Royal Infirmary, to which he is still consulting physician; he was a member of St. Andrew's University Court; and he remains president of the Forfarshire Medical Association. He carries with him in his retirement the affectionate goodwill of the community which he has so faithfully served.

War Honours for Glasgow Graduates.—At an investiture held at Windsor Castle on 24th July, Captain John Taylor, I.M.S., was invested with the Distinguished Service Order. Captain Taylor, who is the second son of Mr. William Taylor, dental surgeon to Glasgow Royal Infirmary, is a student of Glasgow University, where he took the degrees of M.B., Ch.B., in 1905, and that of M.D., with honours, in 1913. In 1906 he gained first place in the examination for the Indian Medical Service, and won the Montefiore Medal for military surgery. He saw active service in the Zakka Khels Expedition in 1908, and was promoted to the rank of Captain in 1909. He was also a member of the Plague Research Commission.

Captain Taylor came to France with the Indian troops in November, 1914, being attached to the 39th Garhwal Rifles, and has been in the thick of the fighting from the Aisne to Neuve Chapelle. His conduct at Neuve Chapelle obtained him the D.S.O., which was the reward of his "conspicuous courage and devotion to duty."

At an investiture held on 5th August, Lieutenant J. H. M'Nicol, M.B.Glasg., R.A.M.C., was decorated with the Military Cross. The circumstances under which Lieutenant M'Nicol earned this award were narrated in our August issue.

State Insurance: Effects of the War.—A meeting of the Insurance Committee for the County of Lanark was held on 23rd June in the County Buildings, Glasgow, Mr. George Fraser in the chair.

The chairman, in submitting the minutes of the finance committee, stated that special difficulties had been experienced as the result of the war. It had had a very material effect on the number of insured in the county. The formation of the reserve battalions, the constitution of Kitchener's Army, and the steady drain of ordinary recruiting for nine months had reduced the number of insured in Lanarkshire by approximately 15,000.

All this had caused great confusion, and very largely reduced the funds available for doctors, drugs, and administration. They all recognised, however, that at this time these were minor difficulties. The insurance authorities would require to face greater difficulties in the future. Already they realised that war problems were arising which would for generations affect the conditions of national existence. The discharge of disabled soldiers, the impairment of health of others, the dislocation of our well-ordered system were present problems of difficulty. Their solution would be rendered more difficult by the heavy financial burdens which were part of the price the country must pay for victory. The great difficulty and perplexity of these very important questions rendered it desirable that at the earliest possible moment the Government and local authorities should take action to consider how they could be solved by methods which would deal generously with those who had suffered in this great crisis.

The minutes were adopted.

Mr. Joseph Sullivan submitted the minutes of the Sanatorium Benefit Committee, in which it was stated that recently the War Office have been in communication with the Commissioners with regard to the case of soldiers discharged from the army suffering from consumption. The regular military hospitals were required for the treatment of wounded soldiers, and the War Office authorities were not able to provide treatment for consumptive soldiers about to be discharged. The committee had been in communication with the Insurance Commissioners, and had now arranged to provide treatment to every Lanarkshire soldier who was discharged from the army suffering from consumption. The War Office will in these cases forward the patient direct to the Middle Ward Hospital, near Motherwell, and from there the soldier will be taken to one of the sanatoria, where the best accommodation and treatment can be provided. The Government are providing a small grant from which certain payments will be made to the committee towards the cost of treatment.

The minutes were approved.

Mr. James Murdoch, in submitting the minutes by the Medical Benefit Committee, stated that out of 217 doctors on the panel for the county 21 had enlisted, and were on service. Arrangements had been made so that medical attendance and treatment were in all cases being provided for the insured persons on the lists of the absent practitioners.

The minutes were adopted.

MATERNITY BENEFIT AND THE CLAIMS OF HOSPITALS.—A conference between representatives of approved societies and others interested in the question of the position of maternity hospitals in relation to the administration of maternity benefit was held on 30th July in the Royal Maternity and Women's Hospital, Glasgow, in view of a statement by the Insurance Commissioners that there seemed to be doubt as to the effect of the rules applicable to the disposal of maternity benefit, and that only a minority of approved societies had entered into agreements with the maternity hospitals in respect of members receiving hospital treatment. The conference was presided over by Dr. J. C. M'Vail, the Vice-Chairman of the Scottish Insurance Commissioners, and among others present were Miss Paterson, Insurance Commissioner; Mr. and Mrs. M. Pearce Campbell, Dr. Robert Jardine, Dr. W. L. Reid, Dr. Barlow, Dr. Munro Kerr, Mr. William Howatt, Dr. George Halket, and Mr. William Guy.

The chairman referred to the important work carried on by the maternity hospitals, and said there never was a time in the history of this country when the duties which they performed towards mothers and children were more necessary than they were at the present moment. If they wanted to make up for the losses caused by the war it was absolutely necessary that every child born should be made fit for its place in life, and that mothers should be in a position to do justice to the upbringing of their children. Maternity benefit under the Insurance Act did not mean cash benefit only. The Act was careful to say that maternity benefit might be paid "in cash or otherwise." It was further provided that agreements might be made between hospitals and approved societies, and that, as regarded maternity benefit, the agreements would be to the effect that a given part of the benefit should be paid direct to the hospital by the approved society. That, unquestionably, was a proper use of maternity benefit with regard to insured persons who took advantage of the hospitals. From the beginning the directors of the Glasgow Maternity Hospital were concerned as to the influence which the Insurance Act might have upon their institution. Certain of their fears the Commissioners were able to dissipate, and other fears, he believed, had been dissipated by experience, but there remained the question of these agreements with approved societies. No matter what society the insured person belonged to the benefit given by the hospital, whether in the wards or by skilled attention under hospital supervision in the home, was uniform. The benefit was uniform, and the payment in respect of the benefit should be uniform. That uniformity could only be achieved by a uniform agreement—by an agreement which would be adopted by all societies.

Dr. Jardine said that if the people only realised the extent and the value of the work which the Maternity Hospital was doing he was convinced that constant appeal for money would not be necessary. Last year they had some 3,490 cases altogether, and 3,097 births. The indoor department had developed to such an extent that the numbers were now about as great as they attended to in the outdoor department. During the present month they had had in the hospital 127 cases, and that was just about an average number. Of these 127 cases there were 41 normal cases and 86 abnormal cases. He doubted if there was an institution in the world that could show the same proportion of abnormal cases. The meaning of that was that there was a greater proportion of difficult midwifery in Glasgow than probably in any other city in the world. They did a tremendous amount of very difficult work, and their success was illustrated by the very low death-rate among their patients, despite the many serious operations which had to be performed. In addition to treating the mothers, they also hoped to inaugurate a department—which they thought would be of very great benefit—to look after the babies during the first year of their lives. He thought that the Maternity Hospital was the place from which that work should be done, preferably to the health department of the city—at all events so far as the babies born in the hospital were concerned. But they required money to carry on all the work of the institution, and he looked to the approved societies to assist them in the way which was now being considered.

Dr. Munro Kerr said he desired to emphasise that that institution was open day and night to any patient who came to their doors. Other hospitals asked for subscribers' lines, but they asked for no lines. If the patient was a suitable case for the institution she was admitted without further question. That was a point which he thought was not sufficiently remembered by the public.

Mr. M. Pearce Campbell also appealed for the support of the approved societies, so that the institution might continue to be run on the most effective lines.

A discussion followed regarding the proposal that approved societies should pay to the hospital a proportion of the maternity benefit received in respect to patients treated in the institution. All the speakers were sympathetic to the proposal, and at the close a resolution was passed unanimously expressing the opinion of the meeting that it was desirable that approved societies with members in Glasgow and district should enter into a uniform agreement with maternity hospitals in respect of members receiving treatment through the hospitals.

St. Andrew's Ambulance Association.—The annual general meeting of this Association was held on 13th July in the Merchants' Hall, Glasgow, under the presidency of the Duke of Buccleuch. The annual report of the council, which was submitted to the meeting, bore witness to the variety and extent of the labours of the Association during the first year of war. In the twelve months ended on 31st May, 12,471 calls had been made on their waggons, bringing the total number of patients conveyed since the organisation was formed up to 163,266. In Glasgow alone there had been 10,171 cases, an increase of 1,652 compared with the previous year, and this had been due to the number of sick and wounded soldiers transported from the hospital trains to the hospitals. Up to 31st May the waggons had attended fifty-two hospital trains and conveyed 2,044 soldier patients, and during the year they had covered 46,974 miles. The value of motor traction in ambulance work was clearly demonstrated, but its adoption, coupled with the enlargement of the area of Glasgow, had involved heavy expenditure, and the council appealed to the public of Edinburgh and Glasgow for increased support. The outbreak of war had brought an increased appreciation of the value of first aid and sick nursing, and the result had been a striking increase in the number of pupils at headquarters and at the branches, 26,242 in all having received instruction, and upwards of 20,000 having qualified for awards for proficiency. The St. Andrew's Ambulance Corps of the Red Cross Branch now numbered over 6,000 men and women. Within forty-eight hours after the outbreak of war the Home Hospitals Reserve had mobilised, and all the subsequent calls had found a ready response. In all, upwards of 1,000 men of the corps were at present on active service.

The Chairman, in moving the adoption of the report and accounts, said that the work of the Association was largely silent. They had never advertised to any extent, but the practical work done was superior to that of other bodies that brought themselves more prominently before the public. Before the war it might have been largely regarded as civil work, and in that respect it had been of the greatest benefit to the country. If they looked at the present work and that done in the past they could not but say that the nation owed a greater debt of gratitude to the St. Andrew's Association than probably they had ever hitherto realised. It was impossible to say how many lives were saved and how much suffering alleviated by those who had been in the Ambulance Corps, and by those training in other respects who had been able to give valuable assistance on the battlefield, and also at the bases and in the home hospitals. The figures as to instruction work showed that in the great stress of the present time the work was being carried on well up to the mark, and that it continued to do increasing good. The figures given in the report did not by any means represent the full number of members of the Association who were serving in one capacity or another. There were many members trained under their auspices who were doing equally good work throughout the country in addition to those mentioned. While the civil work had been kept up to the mark during the year, a considerable amount of assistance had been given to the military in conveying and transporting wounded. At the outbreak of war all the military hospitals in Scotland were staffed by members of the St. Andrew's Ambulance Corps. While they were extremely efficient in the Glasgow and other districts, they would welcome assistance for the formation of new branches. The public must realise that with more money they could do more work, and they would welcome help in money or in kind. His Grace referred specially to the good work done by the Ladies' Auxiliary and the Association's branch of Queen's Mary's Needlework Guild, and appealed to public-spirited gentlemen who wanted to help, over and above subscriptions, to aid in providing additional motor waggons and wheeled litters.

Colonel D. J. Mackintosh, M.V.O., seconded, and the report and accounts were unanimously adopted.

At a meeting of the council of the Association, held at the close of the annual meeting, Colonel D. J. Mackintosh was re-elected chairman for the ensuing year.

RED CROSS SOCIETY: SCOTTISH BRANCH.—Our last notice, published in the July issue of the *Journal*, of the work of the Scottish Branch, brought its proceedings up to the end of May. Early in June the Clothing Committee issued an appeal for further supplies of cotton pyjamas and day shirts for the warm weather, these for hospitals abroad; and for supplies of surgeons' and nurses' operating overalls, drawsheets, and hospital sandbags, for use in the home hospitals. At this time also it was announced that a letter had been received from Lady Gordon Lennox, of No. 13 Stationary Hospital, Boulogne, testifying to the extraordinary efficiency and comfort of the Scottish Red Cross Hospital at Rouen, in aid of which Messrs. Kerr, Andersons & Macleod also intimated that they had received £1,000 as the first instalment of a fund being raised by the members of the West of Scotland Women's Unionist Association. An appeal was issued about the same time on behalf of the Red Cross sale to be held in Glasgow in the autumn for the benefit of the funds of the Society, and the committee took the opportunity of indicating the varied nature of its work, and the demands which its extensive engagements made upon its funds.

On 10th June there appeared a general statement concerning the position of the Scottish Branch in regard to the new policy upon which the Army Council had embarked for the treatment of the sick and wounded, and the steps that the Branch had taken to supplement the work of the military authorities. It was recalled that Red Cross work consisted in giving supplementary civilian aid to the naval and military authorities in the treatment and care of the sick and wounded, the arrangements for such aid being subject to the approval of these authorities. As the Navy had made no claim upon the Scottish Branch, their efforts had been exclusively military. From the outset they had acted in consultation with the Army Medical Service and with the Director-General, Sir Alfred Keogh. Until within the last few weeks the scheme of treatment of the sick and wounded, including men of the Territorial Army as well as of the Expeditionary Force, could be summarised as follows:—

1. By first-line large military hospitals, with the smaller military hospitals grouped round them.
2. By small local Territorial hospitals.
3. By auxiliary hospitals, furnished by the Scottish Red Cross Branch, by civil hospitals, or by private individuals.
4. By convalescent homes offered by the Scottish Red Cross Branch, by private individuals, or by institutions.

In the above scheme the Scottish Branch had materially helped, not only in the care of the sick and wounded, but by furnishing motor transport facilities throughout Scotland, while it had given most valuable aid across the Channel by supplying a section of a first-line military hospital at Rouen, by carrying on transport work there, and by giving motor ambulances to the War Office.

The provision of large numbers of small auxiliary hospitals unfortunately caused a heavy drain upon the supply of trained medical and nursing personnel, whose services were urgently required in the larger institutions. In many cases the smaller auxiliary hospitals were really fulfilling the function of convalescent homes, and were dissipating resources of which the principal hospitals were in need. The War Office therefore decided to make a change. They informed each of the military Commands that "owing to the increasing necessity for economy in the employment of the nursing and other hospital staff" they had been obliged to reconsider the whole question of accepting offers of voluntary assistance in the provision of auxiliary hospitals, and that the time was approaching when individual efforts would no longer be able to provide more than a small part of the accommodation needed. Accordingly the military authorities had laid down a new scheme, of which the following were the main features:—

1. The establishment of large first-line military hospitals, ranging from 500 to 1,000 beds or more.
2. The abandonment of the small auxiliary hospitals, retaining only those ranging from 150 to 200 beds.
3. The establishment of large military convalescent hospitals.
4. The recognition of only purely convalescent homes to be supplied either by the Red Cross or by private individuals.

In view of the clearly expressed desire of the military authorities as to how the best use might be made of the resources for the treatment of the sick and wounded, the Executive of the Scottish Branch of the Red Cross had decided that the most suitable form of civilian assistance they could offer was a large first-line military hospital. The offer was accepted by the Director-General of the Medical Service, who stated that the proposed hospital of 700 beds would be of great use and that he would be very glad to get it. The Executive in coming to their decision were influenced by several important considerations, such as these:—The hospital, for which a site had been obtained in Bellahouston Park, Glasgow, would be located near a large medical school; the abandonment of small auxiliary hospitals would leave free for employment in such an institution as they proposed to erect large numbers of the Voluntary Aid Detachments, who were not prepared to undertake the military obligations attached to service in a military hospital; such an hospital would make use also of that part-time voluntary service which could not be utilised in a military hospital; and it would give an opportunity to all classes of the Scottish people to send contributions in money which would be more profitably employed than if spent upon smaller hospitals. A generous response had already been made to the scheme of the Scottish Red Cross Branch, practically all seven huts into which the hospital was to be divided having been promised by subscribers. The buildings, which were being constructed of asbestos sheeting upon a framework of wood, would be connected by a corridor intersecting each block and separating it into two wards of 50 beds, making 700 in all. The administrative buildings and accommodation for the staff would be provided in adjacent structures of the same material as the huts, and would have a frontage nearer Paisley Road. The plans had been prepared by Mr. Skipper, of Cambridge, who had had extensive experience of work of this class. In respect of site the hospital would possess the advantages of suitable surroundings, with plenty of fresh air and convenience of access from the terminal railway stations. The statement referred also to the auxiliary Woodside Hospital, since then opened in the new buildings of the College of Domestic Science, a description of which has already appeared in these pages.

On 19th June, at an "at home" of the Association of Women Graduates of the University of Glasgow held in Queen Margaret College, Miss Douglas-Irvine, M.A., a member of the first unit of the Scottish Women's Hospital, gave an interesting account of its work in Serbia. She said that after they took over five cottages at Kragujevatz for the accommodation of slightly wounded and convalescent soldiers, they were able to devote the whole of the accommodation of the hospital to men who were badly wounded. They had accommodation in the hospital for 150 patients, and the cases were very bad indeed. Almost all the men had been wounded in the course of the great Serbian victory about four or five weeks before, and almost all of them had received little or no attention in that time. There had been a most tragic waste of health among them, and some of the men came to hospital in a state that made their cases hopeless. All that the staff could do for them was to make their last days more comfortable. There was a terrible amount of pain, and they could do very little for many of the sufferers. But the Serbian soldier bore pain like a hero. He never forgot the cause in which he was suffering, and that seemed to sustain him. The Serbs gave exactly the same treatment to their wounded prisoners as they did to their own men. About a third of the patients in the Scottish hospital were prisoners. They were of every race in Central Europe. The Slavs, who had everything in common with the Serbians, also bore pain exceedingly well. The Magyars—the only people whom the Serbs really hated, and the feeling was mutual—did not attract her, but they certainly had one fine virtue, that of bearing suffering like Stoics. The least easy patients they had were the Austrian Germans. They were both physically and morally a softer people than the Slavs. Miss Douglas-Irvine described the terrible conditions prevailing in the country during the typhus epidemic, and in conclusion urged the necessity of further supporting hospital work in Serbia.

At a meeting of the General Committee of the Renfrewshire Branch of the Red Cross Society, held in the County Buildings, Paisley, on 17th June, Captain Colledge read the report of the work since the beginning of the war. There were 28 detachments in the county—5 men's and 23 women's—and the numbers of these enrolled showed a considerable increase from last year. All the detachments but four had been inspected by War Office representatives, and reports received in each case had been entirely satisfactory. Several very successful field days had been held by detachments during the year.

It was decided to form a separate fund to collect for the object of assisting in the erection of the proposed Red Cross hospital in the Bellahouston Park in Glasgow. The commandants were appointed to receive collections for this purpose.

On 24th June a statement was published giving particulars of a large number of interesting and valuable articles which had already been contributed to the Red Cross sale. On the same date appeared an appeal for funds for the National Red Cross Hospital at Bellahouston, in which the suggestion that provision might be made for the treatment of the sick and wounded by the adaptation of buildings already in existence was discussed and controverted. The idea, said the executive, had probably been fostered to some extent through imperfect knowledge of what was required. There were various kinds of hospitals, and while some buildings might be suitable for adaptation to the purpose in view, the attempt to convert others for the treatment of wounded soldiers would place the patients under unfavourable conditions for recovery both as to time and as to results. The truth was that there were very few buildings which could be adapted adequately to fulfil the functions of a first-line military hospital, if consideration were given to the necessary size and the scope of the work to be performed within their walls. Large lunatic asylums were perhaps the most suitable, and as many of these as could be spared had already been secured by the Government. The Scottish Red Cross had endeavoured to procure a building adaptable for the purpose of a military hospital of the size required, but they were unable to find one. It must not be forgotten that the hospitals which the Army Council desired to see established as soon as possible were totally different in their character from the clearing hospitals, which were only for temporary use before the wounded could be removed to the military hospitals at home. The War Executive of the Scottish Red Cross had kept in close touch with the military authorities since the beginning of the war in order to ascertain how they could best be of service in this crisis, and they believed that the Scottish people looked to them for a lead, such as they had now given, as to how everyone could assist to promote the work entrusted to them.

It was announced on 28th June that the street collection made on the previous Saturday, with the object of purchasing motor ambulances and presenting them to the French Red Cross Society as a gift from the people of Glasgow, had realised the sum of £1,912, 13s. 6d.

On 29th June the Woodside Hospital in Park Drive was formally opened as an auxiliary hospital, the ceremony being performed by Lord Provost Dunlop, while Sir George Beatson, K.C.B., presided over the large company assembled for the occasion. After Sir George had thanked the Lord Provost for performing the ceremony, and the governors of the College of Domestic Science for their transference of the building during the continuance of the war, the Lord Provost said he would be inclined to doubt whether the architect of that wonderful building had planned it for a hospital or for a school of domestic economy, as it seemed to be primarily a hospital. He was glad to hear from Sir George Beatson, who was an expert in hospitals, that it was admirably adapted for the purpose to which it was to be devoted. The Red Cross Society had already a beautiful hospital in the locomotive works at Springburn, in a building which was not constructed as a hospital, but which, like the College of Domestic Science, was very adaptable. He thought, however, that men of the medical faculty, and Britishers generally, were a wonderfully adaptable race. He trusted that the Woodside Hospital would be of great benefit to the military authorities. The Scottish Red Cross, however, were not finished with hospitals, and he believed that they looked forward at no distant date to having another large hospital to relieve the sick and wounded. He desired to congratulate the chairman on the work he had done for the Red Cross, on the support he had received from many people, and on the large army of lady workers who had come forward to assist in ministering to the sick and wounded.

Mr. Scott Dickson also spoke, and Sir Samuel Chisholm, deputy chairman of the College, replied to Sir George Beatson on behalf of the governors. They had felt no little regret in parting with the new College for an indeterminate period, but though there was that regret he assured them there was not a moment's hesitation. The matter was no sooner fully brought before them than they frankly agreed not only to grant the request of the Red Cross Society, but to intimate to the Education Department that they were agreeing to do so, and that if any objection were raised it was an objection on the part of the Department and not on the part of the governors. They were delighted to know that, now that the building had been turned for a season from an educational college to a practical hospital, the arrangements they had made for themselves suited so admirably the requirements of the hospital. The wards and the accommodation upstairs for the nurses were all just as these had been built for the College. They were glad to think that they had been able to contribute that by no means trifling part —for he did not want to minimise it—to the thorough equipment of the Red Cross, and to the comfort and restoration of very many of their returning wounded soldiers.

On the call of Mr. Scott Dickson a vote of thanks was awarded to Sir George Beatson for having presided.

The month of July opened with a general statement of the work of the branch, from which it appeared that the contributions to the Society's funds were over £200,000. Amongst the latest donations were £5,000 from Sir Joseph Maclay, Bart., towards the Bellahouston Hospital; £530 from the British Women's Temperance Association to provide a motor ambulance, £250 from the Albion Motor Car Co., Ltd.; £250 from Mr. J. R. Richmond, £250 from Mr. James Weir, £250 from Mr. William Weir, £250 from Mr. James G. Weir, £200 from Mrs. Stevenson, Woodhall, Port-Glasgow; and £200 from the Scottish Teachers' Fund for War Relief. All these sums were in aid of the Scottish National Red Cross Hospital at Bellahouston, Glasgow.

The military hospital at Rouen was carrying on excellent work. The two motor ambulance units employed in France had recently been combined, and would in future be employed at Rouen alone, where the whole of the ambulance work would be under the control of the Scottish Branch, the unit consisting of at least sixty vehicles. Over 10,000 patients per month had hitherto been conveyed in the ambulances at Rouen alone.

In the work of despatching clothing and comforts to troops over half a million articles had already been sent out. The number received at St. Andrew's Halls during June was 16,786.

Motor transport work at home went on without a hitch. In the week ended on 26th June the cars in Glasgow district alone ran over 2,000 miles, and carried nearly 1,000 patients.

The Scottish Women's Hospitals established in France and Serbia had accommodation for 1,250 beds. An appeal for £100,000 was made, that sum being urgently needed to enable their work to go on efficiently and without interruption. With the object of extending their work, a committee, known as the Glasgow and West of Scotland Sub-Committee for the Scottish Women's Hospitals for Foreign Service, was formed by the Glasgow Suffrage Society, the honorary treasurer of the sub-committee, Miss M. C. Morrison, 202 Hope Street, Glasgow, intimating her readiness to receive subscriptions.

An interesting lecture on the work of the Scottish Women's Hospitals in Serbia was given by Miss Kathleen Burke at the King's College summer meeting in London on 15th July. The Serbians, she said, were at first very silent about the outbreak of typhus, because they felt that the physique of the nation and their ammunition stores were not equal to a strain, and had Austria attacked at that time she would undoubtedly have broken through. The Scottish women who had gone out preferred to work in tents, because they could get better results from nursing typhus in the open air; and no Serbian building, however clean, could be kept entirely free from vermin. At one centre the mortality had been brought down from 85 to 15 per cent by using tents, and they hoped to reduce it still further. The third Scottish Women's unit, called the London and Wales Unit, was shortly sailing for Serbia. The report that typhus was on the decrease could not be accepted too readily, because the Serbians only registered the disease in their towns, and one did not hear much of the remoter districts of the North-West. Even the better class Serbians had little idea of hygiene, and the peasant had none whatever. Every Serbian soldier, well or sick, had a right by law to a loaf of bread, and the nurses found that the women came in from the town to buy bread from the Serbian soldiers, and that they were taking the bread from under the pillows of the typhus patients for their families to eat. Everything was done in such a haphazard way that there was no wonder that the disease spread. When a soldier fell sick he got into the first train that happened to be running. On getting out of the train he wandered into the first open hospital door, and in five or six hours he was in a state of collapse from typhus, with the result that all the people he had travelled with were infected. Speaking of the work in France, Miss Burke said the French women had risen to the occasion magnificently. She had herself seen Parisian exquisites, who in ordinary times were not seen till noon, scrubbing hospital floors, with their hands cut and bleeding. The French soldier, trained three or four years ago, and taken straight from his occupation to the trenches, was not in the same healthy condition as our trained men, and consequently did not recover from his wounds so easily.

On 17th July it was announced that the total subscriptions up to the 13th were £215,895, 11d. 5d. Among the more notable subscriptions received during the week ended on 13th July were those from Sir Charles Cayzer, Bart., £1,000; Children's War Effort, £543, 9s. 8d.; Scottish Bowlers' Association (first instalment), £527, 9s. 6d.; Mr. and Mrs. Fred. Young, 5 Westbourne Terrace, Glasgow, £200; Mr. W. G. Gardiner, 14 St. Vincent Place, Glasgow, £250; Mr. F. G. Gardiner, £250. The St. Andrew's Society of Shanghai had sent £250 for the establishment of beds in the hospital at Rouen.

On 23rd July the Clothing Committee intimated that they had within the past fortnight despatched 10,830 garments to various military hospitals at home and abroad.

REVIEWS.

Rose and Carless's Manual of Surgery. Ninth Edition, Revised by ALBERT CARLESS, M.B., M.S.Lond., F.R.C.S. London: Baillière, Tindall & Cox. 1914.

"THAT most comprehensive and clear of all text-books on surgery" is the description once applied to "Rose and Carless" by an eminent surgeon, himself an author, and they must be few who are not prepared to approve the tribute.

Although the size of the book and its general plan have not been appreciably altered, this ninth edition, nevertheless, embodies many new features, prominent among which is a new section dealing with treatment by heat, light, electricity, and radio-activity. Several new coloured plates and numerous other illustrations have been added, and such other additions and deletions have been made as the recent progress of surgery seemed to demand. The book is, in a word, our old friend brought right up to date.

The Book of Pharmacopœias and Unofficial Formularies. By E. W. LUCAS, F.I.C., F.C.S., and H. B. STEVENS, F.I.C., F.C.S. London: J. & A. Churchill. 1915.

A MONUMENT of industry, "containing the formulas of the British, United States, French, German, and Italian pharmacopœias, together with formulas from unofficial sources, as the British Pharmaceutical Codex, the National Formulary of the United States, the pharmacopœias of the principal London hospitals, &c., the whole comprising about five thousand formulas." An index running to forty-six closely printed pages follows.

It is a mine of information in which those interested will delve with profit. As far as we know, there is no other book of the kind, and, granted that the figures are all accurate, it will form a unique and valuable work of reference.

A glossary of French, German, and Italian names, and tables of thermometric equivalents and metric and imperial weights and measures are given.

There is nothing with which to compare it; but the arrangement, printing, and condensation are such that the book is quite reasonable in size, in spite of the fact that considerable areas of white paper appear on almost every page. What strikes one is that the labour entailed in producing the book could only be undertaken by those who were treating it as a well-beloved hobby.

The work will appeal more particularly to those interested in pharmacy, and we trust the authors will receive compensation for their labour.

Leper Houses and Mediæval Hospitals. The Fitzpatrick Lectures. By CHARLES A. MERCIER, M.D., F.R.C.P. London: H. K. Lewis. 1915.

AS these lectures appeared in the *Glasgow Medical Journal* for January and February of this year, and consequently will have already been appreciated by our readers, it will be sufficient in this place to mention the fact that they have now been published under separate cover, and may be obtained in this form at a nominal price.

Husband's Students' Pocket Prescriber and Guide to Prescription Writing. By DAVID MITCHELL MACDONALD, M.D. Fifth Edition. Edinburgh: E. & S. Livingstone. 1915.

THIS edition has been revised in accordance with the new *B.P.* It contains nearly five hundred prescriptions arranged according to diseases of the various systems and general diseases. The diseases in each system are arranged alphabetically, and one or more prescriptions given for each disease. Various appendices, including a vocabulary, are incorporated. On the whole, the prescriptions are suitable for the conditions mentioned, though naturally each physician has his own ideas on such a matter; but the book would serve more especially as a guide to the student in formulating a prescription for a diseased condition once he has been able to label it.

Painless Childbirth in Twilight Sleep. By HANNA RION.
London: T. Werner Laurie, Limited. 1915.

FOR some time articles have been appearing in various lay papers and magazines on the subject of painless childbirth, or the so-called twilight sleep in labour, and now we have this book appearing, written by an American, Hanna Rion. The authoress, or perhaps it is the publishers, claim that it is "one of the most important books of the century." To use an American phrase, that is a pretty tall order.

On the cover of the book the following announcement is made:—"In 'twilight sleep' we have an acknowledged, tested, and perfect method of painless childbirth. It is a Gospel of Hope for every thinking woman who has a child, who hopes to have one, or fears to have one, or who has a daughter who may some day be a mother." That is a very sweeping and comprehensive statement, but it is one which is made by a writer with no scientific training. In the March number of *Surgery, Gynecology, and Obstetrics*, in an article entitled "The latest word on the subject of scopolamine semi-narcosis," we find the following statement:—"The conclusions drawn by the writer after the unusual opportunity to investigate the Freiburg method as applied in this country [America] are not different from those given in the paper published in the December number of the *Journal of the Kansas Medical Society*. It is a hospital procedure, and not universally successful. It can be safely used only by those who have been specially trained." That is the statement of a medical man who had visited a large number of hospitals in America where the treatment was being tested. Our experience bears out this statement.

The book is made up of interviews with patients who have undergone the treatment, interviews with various medical men, abstracts from numerous papers on the subject, and reports of discussions in various societies. We notice that Buist, of Dundee, and Sir J. Halliday Croom, of Edinburgh, have allowed their views to be given. We are glad to see that Buist maintained that the medical man in attendance must decide whether or not the treatment was to be adopted. This is not the view of the writer. Croom has allowed an interview with him to appear, and he has also written a letter for publication in the book. He says—"Ever since its first introduction I have used it regularly in every private case under my care, rendering the whole process a dream, and without the slightest bad effects either to the mother or the child." This statement reminds us of the legend attached to an advertisement of a well-known soap. Has the General Medical Council nothing to say in reference to the appearance of this letter in a lay publication?

We are sorry this book has appeared. No good has ever come from attempts to force the hands of the medical profession. The travellers for several of the large drug firms have informed us that they are supplying large quantities of scopolamine and morphine to general practitioners in England. We trust that the Scottish practitioners will think twice before they take up the treatment. We repeat the American doctor's warning—"It can be safely used only by those who have been specially trained."

An Introduction to Midwifery: A Handbook for Medical Students and Midwives. By ARCHIBALD DONALD, M.A., M.D.Edin. With numerous Illustrations. Seventh Edition, Revised. London: Charles Griffin & Co., Limited. 1915.

THIS handbook has now reached its seventh edition. It is intended for students as well as midwives, and the author states he has "omitted all reference to measures that are outside the province of those for whom the book is intended." We think that this is a mistake, and the author would have added to the value of the book if he had given more information in regard to treatment in emergencies. For instance, in the treatment of a case of unavoidable hæmorrhage, a doctor is to be sent for, and the patient is to be kept in bed in a cool, quiet, and well-ventilated room. We have no fault to find with the advice, so far as it goes, except to remark that such an ideal room will be difficult to find in the slums; but suppose the doctor cannot be got for some hours, is the nurse to stand beside her patient and watch her bleed to death? No! she should try to save that woman's life, and to enable her to do so she should have been taught what to do in such an emergency. Curiously enough, in the treatment of accidental hæmorrhage, the author says that the pupil may rupture the membranes when the head or breech presents. That is sound advice, but why shouldn't she have been told of something to do to check the bleeding in the other form of hæmorrhage?

The book is a very good one so far as it goes, but in our opinion its value would be greatly increased if more information were given as to how to deal with emergencies, when medical assistance cannot be obtained in time.

The Brain in Health and Disease. By J. SHAW BOLTON, M.D., D.Sc., F.R.C.P. London: Edward Arnold. 1914.

THIS volume is the result of Dr. Shaw Bolton's elaborate researches, extending over a period of eighteen years, into the minute anatomy of the normal and abnormal brain, and it constitutes an attempt to establish normal and abnormal cerebral function upon a definite anatomical basis. "The work," says its author, "must be regarded as a treatise on general cerebral physiology and pathology, and not as in any sense a text-book, monograph, or dissertation on mental disease." It happens, however, that of its four hundred and seventy pages two-sevenths are devoted to cerebral function in the normal brain, and five-sevenths to cerebral function in mental disease, and in view of this apparent disproportion it is a little difficult to adopt the attitude which is thus postulated. The former section, elaborate as it is, is indeed in a large measure a preparation for the latter, and it is upon the result of his minute inquiry into normal anatomy and function that Dr. Bolton builds up a new classification of mental disorders.

His method is as follows. He has taken for particular study three special areas of the cerebral cortex—the visuo-sensory, the visuo-psychic, and the prefrontal. Of these he has made very numerous micrometric measurements, determining thus, in each region, the average thickness of the cortex as a whole, and of its several laminæ, in health and in conditions of mental disease, and studying in addition the order in which the laminæ develop. Viewed from this anatomical standpoint he finds that all cases of mental disease can be divided into two classes—those which exhibit from the macroscopic aspect "abnormal, no abnormal, no morbid, or slightly morbid appearances;" and those "which exhibit morbid signs of any higher grade of intensity, and, in some instances, abnormal appearances also." The former he classes under the term amentia, the latter under the term dementia; amentia connoting defective neuronic development, dementia neuronic degeneration following insufficient durability. Aments suffer more or less markedly from sub-evolution of the cerebrum, dements from involution and dissolution of the cerebrum. Amentia does not preclude the onset of dementia, of which senile mentation may be regarded as a mild degree, and in many aments cerebral senility occurs at an abnormally early age.

The changes in the cortex are characteristic for his two types of mental aberration. In amentia there are in the visuo-sensory and visuo-psychic areas marked individual variations which appear to bear no relation to the degree of amentia; and the same is true of dementia. But in the prefrontal area both specialisation and individual variation are absent, and the cortex exhibits in amentia a degree of sub-evolution varying with the grade of amentia present. "The laminæ are sub-evolved in their normal order, the last to appear being the least developed." In dementia the condition is one of dissolution, and the last lamina to appear in normal development is the first to undergo retrogression. Wasting of the convolutions corresponds very exactly to the degree of dementia, and the greatest degree of wasting is found in the prefrontal region. Dementia is thus, in the sense in which Dr. Bolton uses the word, a permanent mental deterioration arising from a neuronic degeneration which is demonstrable both macroscopically and microscopically, and which depends directly or indirectly upon toxic agents. The first clinical evidence of this toxic state is a condition of "mental confusion," which may end either in recovery or in permanent dementia, the difference in result being conditioned by the degreee of durability of the neurons.

It is impossible owing to limitations of space to give in detail the classification of mental diseases which follows upon the adoption of this conception, but it will be readily seen that under amentia must be included cases of idiocy and imbecility with or without epilepsy, cases of recurrent insanity, hysteria, epileptic insanity, and paranoia; while under dementia will fall those cases which may be regarded as primarily neuronic —senile or "worn-out" dementia, climacteric, adult, and premature or adolescent dementia—and those progressive cases chiefly of secondary origin, which include progressive senile dementia and general paralysis.

Such in general outline is the scope of Dr. Bolton's conception of mental disease, and even from so brief a summary it will be evident that his work has rendered signal service to the alienist, were it in nothing more than the establishment of a sound anatomical basis for the study of insanity. But, as the preface justly claims, it is in reality of even wider purport. In the analysis of cerebral function, much will be found for which the physiologist is in the author's debt; in the numerous and graphic records of cases the clinician will discover a congenial field of study; while the temperate and judicial style, possible only to a writer whose opinions are the result of long and wide experience and deep knowledge of his subject, adds weight to everything that Dr. Bolton has to say. It is superflous to commend such a book to the expert alienist; it may not be unnecessary to say that it should be in the possession of every one interested in the study of the brain.

An Index of Prognosis and End-Results of Treatment. Edited by A. Rendle Short, M.D., B.Sc., F.R.C.S. Bristol: John Wright & Sons. 1915.

A companion to the *Index of Treatment* and *Index of Differential Diagnosis* already published by Messrs. Wright & Sons, this volume aims, in the words of its editor:—

"(1) To set forth the results, and particularly the end-results, of various methods of treatment, in such a form as will enable the practitioner to obtain a fair, unbiased, reasoned opinion as to the prospects of securing for his patient permanent relief, and the risks of such treatment.

"(2) To furnish data by means of which, apart from the question of treatment, one may seek to arrive at an accurate forecast of what will probably happen to the individual patients."

This attempt has not been made before. The information afforded by the text-books on the subject of prognosis, as Dr. Short points out with too much reason, is vague, general, and insufficient. It seldom affords the practitioner more help in an individual case than can be derived from a statement of average results, and it very rarely discusses with any detail what in the way of benefit or danger is to be expected from a particular line of treatment. A knowledge of prognosis has to be gained laboriously, as the result of the experience of many years; and since, next to a speedy cure, it is the outlook for the future in which the patient is most interested, his preference for a senior practitioner is readily understood. But even the senior practitioner, relying on his personal experience alone, may easily be at fault in cases of the rarer diseases, of which he may see not more than one or two in a lifetime.

There is room, then, for such a volume, and whatever may be said against an index of diagnosis in which the reader starts by investigating all the possible causes of the leading symptoms, similar objections do not apply to an index such as this. It must be judged solely by the completeness with which it fulfils its aims, and that these have been in this instance fulfilled in an admirable manner is not open to question. The number of contributors, all of them well known and authorities upon their special subjects, is considerable, and from the point of view of the pleasure they afford to the reader there is naturally some difference between individual articles. But all of them convey information of the highest value, which it is hardly possible to obtain elsewhere in a collected form; they convey it impartially, not merely on the *ipse dixit* of the writer, but as a result of careful examination and comparison of series of statistics, and what they convey is just the kind of information which is of the greatest practical use. The reader of the book will find his therapeutic efficiency increased by its comparative appraisement of the value of different forms of treatment in a given case; and he will also find that his forecast of the future, resting on a surer basis than it formerly did, is of more worth both to his patient and to his own reputation.

Occupational Affections of the Skin. By R. PROSSER WHITE, M.D., M.R.C.S. London: H. K. Lewis. 1915.

DR. PROSSER WHITE has performed a very useful work in providing in this volume a brief but comprehensive survey of the trade processes and agents which give rise to occupation dermatitis. Opening with a short account of the etiology, pathology, and distinguishing features of these affections, he goes on to consider their separate varieties. The disorders due to "trades, chemicals, and processes" are dealt with in the next three chapters, which are followed by a chapter on petroleum and tar distillates, after which comes one devoted to the effects of aniline and aniline dyes. A section upon dermatitis veneneta follows, in which the irritations due to the handling of plants are treated, and the book closes with a description of the zoetic dermopathies—butcher's pemphigus, anthrax, glanders, and the dermatomycoses. Within its short compass it includes a mass of information of the utmost value, both to the dermatologist and to all who are concerned with the diseases of industrial life.

Nature and Nurture in Mental Development. By F. W. MOTT, M.D., F.R.S. London: John Murray. 1915.

THE groundwork for this volume is the series of Chadwick Trust Lectures delivered by Dr. Mott in 1913. Of these it is an expansion, but even in its expanded form it constitutes a book of only some one hundred and fifty pages. It might be asked, as Dr. Mott indeed hints in an apologetic preface, whether much that is useful could be said upon so large a subject in so limited a space. To those who know his work the question is superfluous, and the penetrating and suggestive character of his writing is apparent on each page. Among the subjects of which he treats are the influence of environment and heredity in mental hygiene, the correlation between mind and matter as illustrated in the cerebral hemispheres, the relation between the hormones and mental activity, neuropathic inheritance and the inheritance of genius, the effect of sex upon character, and the influence of nutrition and education upon mental development. The range is wide, but the brief handling of each subject is full of suggestion, and no reader can fail to extract from the little book much that will give him food for thought.

A Manual of Chemistry: Theoretical and Practical, Inorganic and Organic. By ARTHUR P. LUFF, M.D., B.Sc.Lond., F.R.C.P., F.I.C., and HUGH G. H. GANDY, B.A., B.Sc.Lond., F.I.C. Fifth Edition, enlarged. London: Cassell & Co., Limited. 1915.

THIS is a book which is stated to be adapted to the requirements of students of medicine, and it may be agreed that it fulfils these requirements very well indeed. It is of medium size, but it manages to deal with chemistry from the point of view of the medical student in quite an adequate fashion. It is well written and clearly arranged, contains no padding, and goes straight to its objective. Of course, in a book of this size the subject cannot be dealt with very fully, but the selection exercised by the authors has been a very happy one, and we can cordially recommend the book for the purpose stated. It is a very good one.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

MEDICINE.

Cerebral Œdema (Wet Brain) in Chronic Alcoholism. By C. E. Sceleth, M.D., and Arthur F. Beifeld, Ph.B., M.D. (*American Journal of Medical Sciences*, June, 1915).—The authors have had considerable experience of cerebral œdema at the House of Correction Hospital, Chicago, and this paper embodies the result of their experience.

After long continued over-indulgence in alcohol an individual, for reasons as yet undetermined, develops delirium tremens. The latter usually manifests itself in three stages—incipient, fully developed (classic), and comatose (wet brain). The symptoms of wet brain are essentially meningeal, the chief being semicoma, generalised hyperæsthesia, and muscular rigidity (Kernig and neck rigidity). The more marked are the two latter features, the graver is the prognosis. The cerebro-spinal fluid is to all appearances normal. The mortality is nearly 75 per cent. Necropsy reveals no gross lesions apart from the more or less marked fluid accumulation in the pia-arachnoid space, a widening of the sulci, and a narrowing of the convolutions, to account for the symptoms of changes in the brain. Associated with the cerebral œdema complex there is very often broncho-pneumonia, which obscures the diagnosis and usually is responsible for death. The differential diagnosis concerns itself particularly with the possibility of concomitant skull fracture, which may easily be hidden by the nervous manifestations of comatose delirium tremens.

—Archd. W. Harrington.

Tertiary Syphilis of the Liver. By Thomas M'Crae, M.D., F.R.C.P. (*Johns Hopkins Hospital Bulletin*, May, 1915).—The author, from a series of 70 cases, has been impressed by certain points. First of all is the relatively slight attention paid to the subject, and secondly the relative frequency of the condition. The third point is the ease of diagnosis in the majority of the cases, and the fourth is the satisfactory result of treatment if the diagnosis is made in good time.

The disease is one of adult life, occurring chiefly between the ages of 30 and 40 years.

In the author's series an undue proportion occurred in the coloured races. A surprising number of coloured females were affected.

Alcohol seems to be another very definite factor.

The commonest symptom was swelling of the abdomen, and next in frequency abdominal pain. Loss of weight was present in many cases and was often extreme. Jaundice, vomiting, and fever occurred. In one group prolonged fever was the striking manifestation. The duration of symptoms before the patient came under observation showed a wide variation. The shortest was a period of three weeks, and the longest eleven years. The majority gave a history of illness varying from three to eighteen months. The severity of the symptoms varied from time to time. Several of the patients had had attacks of ascites for which tapping was performed, after which there had been marked improvement for a time. Several gave a history of alternate periods in bed and at work. Pain was referred to the upper abdomen, to the upper epigastrium, or to the upper right quadrant, rarely to the back.

Loss of weight was marked in half the cases. Jaundice occurred in about half the cases. Fever was present in all the cases but eight. The blood showed a moderate secondary anæmia, without leucocytosis. Ascites occurred in 27 cases, but only 13 required tapping.

The spleen was palpable in half the patients. In some the enlargement was marked.

With regard to the liver, most of the cases fall into one of three groups—

(1) The liver shows general enlargement, the organ being comparatively smooth in the majority of cases. The group comprised 27 cases.

(2) The liver shows definite nodules. There were 21 cases of this.

(3) The liver shows marked general enlargement, and also very marked prominences. This occurred in 11 cases.

The remaining cases of the series could not be classified definitely, as they showed features of two of these groups.

There are several points which may aid diagnosis. One suggestive feature is that the left lobe of the liver is often involved to a much greater extent relatively than the right. Also a history of ascites, which subsided spontaneously or disappeared after tapping to reappear some time later, should excite suspicion. It is important to examine the patient immediately after tapping. The therapeutic test with iodide is useful, and is usually strikingly shown in the temperature chart. In the majority of cases the temperature falls to normal within two days, and it rarely takes longer than five days. The enlargement of the liver may disappear very rapidly. Early diagnosis is important, for then complete recovery may ensue.

As regards the liver condition, the treatment may be summed up in one word, "iodide." The dosage does not require to be very large—rarely over 60 grains daily. Tapping should be done when necessary. Salvarsan was given to several cases, with no apparent effect on the liver itself.

—ARCHD. W. HARRINGTON.

The Diagnosis of Tuberculosis in Early Life. H. R. M. Landis, M.D., and Isadore Kaufman (*Ninth Report of the Henry Phipps Institute*, 1915).—The writers confine themselves to the diagnosis of chronic forms of the disease. They discuss the great difficulties in diagnosis, and point out that while infection commonly occurs in early life, we are quite unable to explain what is the determining factor of the development of open tuberculosis in later life. The problem is one of the diagnosis of the social surroundings rather than of the physical condition. An analysis of the study of 362 children is given, and details of the symptoms of those who developed signs of tubercle. Exaggeration of physiologically normal signs is easily interpreted as pathological. A bronchial quality of breathing may be heard all over the chest by the expired air being directed into the pharyngeal vault or against the roof of the mouth. Then, again, the lungs at times seem to move independently, with the result that loud puerile breathing is heard over one side, while over the other the breath sounds are almost inaudible. This peculiarity is often due to faulty posture.

Much has been written about enlargement of lymph nodes in the diagnosis of tuberculosis in the child; and the fact that the age of childhood is known as the lymphoid age seems to have been entirely forgotten. All children, irrespective of their social condition, have lymph nodes which are readily palpable. They are not readily detected till about the second year, but are so from then till puberty.

To confine the examination to one group such as the cervical, and because the nodes in this situation are palpable, to assume that it is an evidence of tuberculous infection does not seem in any way justifiable, especially so in view of the fact that all the lymph nodes of the body are hypertrophied according to adult standards.

Also regarding the bronchial glands, the alleged percussion changes such as the semilunar areas in the second and third interspaces anteriorly and the vertebral dulness posteriorly, which are supposed to be indicative of such enlargement, are fanciful rather than real, and the questionableness of such findings has been shown by Gittings and Fetterolf in their work on frozen sections of the thoraces of infants and young children.

The mere fact that these nodes show some enlargement on *x*-ray examination is no proof that they are pathologically enlarged in view of the fact that all the superficial nodes are hypertrophied normally.

There is a great difference between tuberculosis that is clinically recognisable and hypersensitiveness to tuberculin. It is a great mistake to assume that, because a child reacts to some one of the tuberculin tests, it is tuberculous in the sense that it needs active treatment. The main problem consists in determining whether the child is physiologically normal, and if not, of using every endeavour to provide the means of making it so.

[The result of this careful investigation would seem to prove that none of the "footrule" methods set up by numerous observers can be accepted in the difficult problem of the detection of chronic tuberculosis in children.]

—JAMES SCOTT.

SURGERY.

Rib Mobilisation for Phthisis. By H. Morriston Davies (*The British Journal of Surgery*, April, 1915).—This operation has been designed for those cases of phthisis in which the production of a nitrogen pneumothorax is impossible owing to interpleural adhesions. The idea was conceived by Wilms, and has been developed by Sauerbruch and by the author. It is of importance to carry out free rib resection, completely to mobilise the first rib, and to divide the costal margin.

The operation is carried out in two stages, the posterior portions of the first nine ribs being removed first, and parts of the seven costal cartilages and of the costal margin being resected later.

Great advantages are obtained by blocking the intercostal nerves by injecting absolute alcohol into them—(1) Perfect anæsthesia can be maintained with a minimum quantity of chloroform; (2) the pain caused by the cut ends of the ribs irritating the pleura is abolished, and movement of the side of the chest is diminished by the intercostal paralysis; (3) the field of operation at the second stage is to a great extent anæsthetised; (4) intercostal paralysis allows probably a greater degree of collapse.

The optimum interval between the stages is not always easy to determine, but the temperature chart should be studied carefully. The reaction following the first stage must have subsided before the second is carried out. Two weeks at least should elapse; sometimes a month or six weeks may be necessary.

—CHARLES BENNETT.

Joint Tuberculosis. By Leonard W. Ely (*American Journal of Orthopedic Surgery*, April, 1915).—In an editorial Dr. Ely criticises severely our knowledge of, and attitude towards, the subject of joint tuberculosis. In particular he calls to account the orthopædists within whose sphere it has come to lie, and after calling attention to the divergence of their views on the location, pathology, diagnosis, and treatment of the disease, he concludes:—"Who will bring order out of this chaos? Joint tuberculosis at present is in the hands of the orthopedic surgeon. If he rise to the emergency and solve his problem, he will retain what he has considered his property. If others solve it, they will take from him what he has and employ him possibly to apply a brace if they regard it as necessary."—CHARLES BENNETT.

DISEASES OF CHILDREN.

Case of Acute Encephalitis showing Presence of Spirochætes. By Drs. Pehu and Gardére (*Archiv. d. Med. d. Enfants*, No. 6, 1915).—The child was born at term of a mother suffering from syphilis which she had contracted four years previously. At the age of 2 years the child suddenly developed a right-sided hemiplegia, and fourteen days later a broncho-pneumonia which terminated fatally.

At *post-mortem* examination some purulent serum was found in the right pleural cavity and a slight broncho-pneumonia of right lung. The brain showed atrophy of the left lobe of the cerebellum, with arteritis of the vessels at the base and in the left sylvian fissure. Scattered over the surface of the left cerebral hemisphere were several foci of encephalitis; they were small, of a yellowish colour and soft consistence, limited to the grey matter, and did not implicate the basal nuclei. In the neighbourhood of the foci the meninges were thickened.

Microscopic examination showed foci to be composed mainly of round cells, with epithelioid cells towards periphery, and surrounded by dilated blood-vessels. The thickened patches of meninges presented infiltration with round cells. Sections of foci, stained with silver nitrate according to Levaditi, disclosed the presence of numerous spirochætes.—LEONARD FINDLAY.

Ovarian Sarcomata in Children: An Account of Three Cases. By T. T. Higgins (*British Journal of Children's Diseases*, June, 1915, p. 161).—The following is a brief summary of the cases:—

1. Female, æt. 5 years, admitted to hospital with fever, and large tender swelling in lower part of abdomen; rectal examination revealed presence of tumour in pelvis. The swelling had been first noticed six weeks previously, and had gradually increased in size. During the illness colic and constipation had been prominent symptoms, and during the week just before admission a hæmorrhagic vaginal discharge had been noticed. Laparotomy was performed, and a large left-sided ovarian sarcoma (round and spindle-celled), weighing 3½ lb., was removed. *X*-ray treatment was carried out after operation to diminish chance of recurrence. Child well five months later.

2. Female, æt. 10 years, admitted to hospital with a history of recent colic, constipation, and loss of weight. A lump in the belly had been noticed five weeks previously. On admission, child was pale, temperature normal, and there was detected a round, freely movable tumour which rose out of pelvis, and *per rectum* felt on right side. Laparotomy and removal of a sarcomatous tumour (round and spindle-celled) from right broad ligament.

3. Female, æt. 7 years, was admitted to hospital in an exhausted condition after an illness of four months' duration characterised by fever, with a large abdominal mass rising out of right side of pelvis and reaching to the level of the liver. Death. *Post-mortem* a large round-celled sarcoma weighing 5¾ lb. was found in connection with the right ovary.—LEONARD FINDLAY.

The Mode of Infection and Etiology of Epidemic Poliomyelitis. By Simon Flexner (*American Journal of Diseases of Children*, May, 1915).—In this paper the author discusses the two present day views regarding the mode of dissemination. According to one school the disease is communicated by personal contact, and to this view Flexner gives his adherence, whereas it is held by others that the disease is conveyed by the stable fly. The evidence in favour of this latter theory is based on the work of Rosenau, and Anderson and Frost, who stated that they had been successful in transmitting the disease from one monkey to another by allowing stable flies to feed first on an infected animal and then on a healthy animal. Unfortunately for this view subsequent workers did not confirm these results, and later Anderson and Frost admitted that they had been unable to repeat their earlier successful experiments.

In considering the other view it must be borne in mind that within recent years our conception of poliomyelitis has undergone a great change. It is now appreciated that there are paralytic and non-paralytic or ambulant types of the disease. The proof that such abortive or ambulant types are seen is based on cerebro-spinal fluid findings and immunity changes in the blood, and that the virus causing the disease has been found in the naso-pharynx of such cases in sufficient amount to infect monkeys. The organism has also been obtained from throats of healthy individuals who have come in intimate contact with persons acutely ill with poliomyelitis. Thus the question of poliomyelitis carriers must be raised, and it is most likely that it is by means of healthy and chronic carriers that the disease is distributed. As Flexner says, "Given, therefore, the possibility of the distribution of the virus being affected by (1) the frankly ill, (2) the slightly ill, (3) healthy, and (4) chronic carriers (*i.e.*, people recovered from the disease), the striking discrepancy noted between the prevalence of cases in small sparsely populated rural communities and the more thickly populated cities at once disappears."

Under the question of the etiology Flexner states that two years ago he and Noguchi obtained cultures of a minute organism which they thought was possibly the microbic agent. The cultures were derived from the central nervous organs of human beings and monkeys who had had poliomyelitis. They were successful in causing the disease in monkeys with these cultures. Recently they have confirmed this result. The cultures had been isolated eighteen months previously, and had been sub-cultured several times. Finally, they used a medium of ascitic fluid and broth. The fluid, which contained very large numbers of the minute organisms, was injected intra-spinally and intra-peritoneally into rhesus monkeys. Single injections caused no effect, but repeated injections invariably caused the disease. This is quite in accord with what Flexner and Lewis had previously shown. These workers found that when subminimal doses of the usual virus were injected no effect was produced, but that when subminimal doses were repeated paralysis suddenly supervened.—LEONARD FINDLAY.

Leucocyte Counts during Digestion in Bottle-Fed Infants. By A. Graeme Mitchell (*American Journal of Diseases of Children*, May, 1915).—This author would seem to have carried out as yet the most extensive research on this question so far as infants and children are concerned. As will be seen from the conclusions quoted, his findings are opposed to the usually accepted views, and he accounts for this by the fact that the majority of workers have delayed too long after a feed before examining the blood. He usually made an examination immediately after a meal, fifteen minutes later, thirty minutes later, and then every half hour until four hours after the ingestion of food. His conclusions are :—

1. Bottle-fed babies do not constantly show digestive leucocytosis ; in fact, the majority show a smaller number of leucocytes in the superficial blood after taking food than before.

2. This decrease is greatest at from one to two and a half hours after food, and tends to rise before the next feeding.

3. When a rise does occur, it is most frequently soon after feeding, and begins to decline in half an hour.

4. Crying, struggling, and chilling of the part from which the blood is extracted increases the count.

5. There seems to be as yet no adequate explanation for the increase or decrease.

6. Comparative counts should be made at the same time of day, and at the same time in relation to food.—LEONARD FINDLAY.

DISEASES OF THE EYE.

Montessori Education for Children with Defective Sight.—Mr. Leslie Paton read a paper on this subject before the Section of Ophthalmology of the Royal Society of Medicine on 3rd March, 1915.

In view of the interest which is being taken recently in the subject of education of children who are defective in one or other sense, it may be of interest to some to hear how this method of education may be employed in the case of children who are partially blind.

The Montessori system aims at the beginnings of education of children of from 3 to 6 years of age. Madame Montessori had studied with interest a paper by Sequin (1846), in which the author showed that by the exercise of care and discretion idiots or mentally defective children might be educated in a wonderfully complete degree. The result, to Madame Montessori, was that she considered that if defective children could be so satisfactorily educated, it was probable that well-developed children could by the same means be educated better than by the ordinary method. In 1907 the first Montessori school was initiated in Rome, and the system has now been tried with greater or less success, probably in all parts of the world.

The great point about the system is that even at the tender age of 3 the child is, without its knowledge, being taught to do something, and also that the teaching is of such nature that weariness of a subject is never induced, because, by patient and judicious management, the work is changed as the child wishes. This means that the children do, within limits, almost exactly what they like best, whilst still under the dominance of some person whose presence is a gentle restraint, and who is the guide and friend of the little pupils.

It is highly probable that to be an unqualified success the Montessori system requires two factors which are rather difficult to obtain, namely, (1) a teacher who has love of children and patience in equally high proportion, and (2) a very small class.

The idea underlying the system is to educate the various senses—tactile, muscular, &c.—by various means, each sense more or less by itself. Blindfolded children are given little exercises to do, such as hooking, buttoning, &c.; these are to educate the tactile sense. Then blocks of wood, metal, &c., are to be arranged by weight, educating in this way the muscular sense. Later, form sense is educated in a similar manner, and it is wonderful how soon the children learn to put blocks of varied shape in places made for them, without the aid of vision. Having trained the senses so far, it is but a step further to learn alphabet and writing of letters and figures.

It is said that the success which has followed the practice of this system of teaching is wonderful.—Leslie Buchanan.

The Psychology of Traumatic Amblyopia following Explosion of Shells.—In the *Proceedings of the Royal Society of Medicine* (Section of Neurology) of 25th March, 1915, Mr. Herbert Parsons discusses this very interesting and important subject.

The object of the paper, it may be said, is to prevent the subjects of the condition traumatic amblyopia from being judged as malingerers or as hysterical, and to ensure that they have, so far as possible, that sympathetic but firm guidance from the medical officer which is so necessary to their entire recovery.

Mr. Parsons first describes a typical case of blindness following shell shock, and then discusses the psychology of the condition, showing, in a very interesting manner, how the various factors, disposition, temperament, and character are related to one another, and act together in determining the result of any great event in life or any great shock.

It is clearly pointed out that the person who complains of more or less complete blindness after a huge explosion is not "shamming," even though no explanation of the blindness is found by the ophthalmoscope. Generally, the sight returns after a time, which is more or less long in accordance with the temperament of the individual.

The treatment must be by patient encouragement and cheerful society, which will tend to encourage forgetfulness.—LESLIE BUCHANAN.

Books, Pamphlets, &c., Received.

Materia Medica and Pharmacy for Medical Students, with an Appendix on Incompatibility, by Reginald R. Bennett, B.Sc.Lond., F.I.C. Third edition. London: H. K. Lewis. 1915. (4s. 6d. net.)

Amœbiasis and the Dysenteries, by Llewellyn Powell Phillips, M.A., M.D., B.C.Cantab., F.R.C.P.Lond., F.R.C.S.Eng. London: H. K. Lewis. 1915. (6s. 6d. net.)

Cystoscopy and Urethroscopy for Practitioners, by Bransford Lewis, B.S., M.D., F.A.C.S., and Ernest G. Mark, A.B., M.D., F.A.C.S. With a Chapter by William F. Braasch, M.D. With 113 illustrations, 23 of which are printed in colors. Philadelphia: P. Blakiston, Son & Co. 1915. ($4·50 net.)

Squint: Its Causes, Pathology, and Treatment, by Claud Worth, F.R.C.S. Fourth edition. London: John Bale, Sons & Danielsson, Limited. 1915. (6s. net.)

Emergencies in Medical Practice: The Pathology and Treatment of Morbid Conditions that may Suddenly Endanger Life, by Sanitætsrat Dr. Richard Lenzmann. Translated from the third edition by Ronald E. S. Krohn, M.D.Lond. London: John Bale, Sons & Danielsson, Limited. 1915. (21s. net.)

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by J. J. Graham Brown, M.D., and James Ritchie, M.D. Vol. XIII. Edinburgh: Oliver & Boyd. 1915.

Aids to Tropical Medicine, by Gilbert E. Brooke, M.A.Cantab., L.R.C.P.Edin., D.P.H., F.R.G.S. Second edition. London: Baillière, Tindall & Cox. 1915. (3s. net; cloth, 3s. 6d. net.)

An Index of Prognosis and End-results of Treatment, by Various Writers. Edited by A. Rendle Short, M.D., B.S., B.Sc.Lond., F.R.C.S.Eng. Bristol: John Wright & Sons, Limited. 1915. (21s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDED 21ST AUGUST, 1915.

	WEEK ENDING			
	July 31.	Aug. 7.	Aug. 14.	Aug. 21.
Mean temperature, . .	56·8°	59·2°	62·7°	58·8°
Mean range of temperature between highest and lowest,	15·2°	12·1°	17·1°	15·2°
Number of days on which rain fell, ...	4	6	6	1
Amount of rainfall, . . ins.	0·67	0·53	0·49	0·43
Deaths (corrected), . .	288	296	287	262
Death-rates, ...	13·9	14·3	13·9	12·7
Zymotic death-rates, . .	2·0	1·5	1·6	1·0
Pulmonary death-rates, .	2·2	2·5	2·3	2·4
DEATHS—				
Under 1 year, . . .	69	58	61	50
60 years and upwards, .	47	77	52	62
DEATHS FROM—				
Small-pox, ...	...	...	...	...
Measles, ...	32	19	20	13
Scarlet fever, . . .	5	5	10	1
Diphtheria, . . .	2	1	1	2
Whooping-cough, . .	1	5	...	4
Enteric fever, . . .	...	...	1	1
Cerebro-spinal fever, . .	4	5	1	4
Diarrhœa (under 2 years of age),	7	10	16	13
Bronchitis, pneumonia, and pleurisy, . . .	28	36	32	25
CASES REPORTED—				
Small-pox, ...	...	...	...	...
Cerebro-spinal meningitis, .	7	6	5	5
Diphtheria and membranous croup, ...	18	23	24	34
Erysipelas, . . .	29	26	28	27
Scarlet fever, . . .	82	107	140	100
Typhus fever, . . .	1	...	...	...
Enteric fever, . . .	8	3	10	4
Phthisis, ...	35	45	34	37
Puerperal fever, . .	2	3	4	4
Measles,* . . .	223	218	163	118

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, 26*th August*, 1915

THE

GLASGOW MEDICAL JOURNAL.

No. IV. October, 1915.

ORIGINAL ARTICLES.

A SERIES OF CASES ILLUSTRATING SOME OF THE RARER BLOOD DISEASES.

By J. SOUTTAR M'KENDRICK, M.D., F.R.F.P.S.,
Assistant Physician, Western Infirmary, Glasgow.

The following cases have recently been under my care when acting for Dr. W. MacLennan in the wards of the Western Infirmary. They form a series which, taken collectively, demonstrate, clinically and pathologically, the essential differences between the more obscure blood affections. When taken separately, also, they seem to present certain points of scientific interest that are worthy of publication.

Case I.—*Splenic anæmia—Splenectomy—Apparent cure.*

N. M'L,, æt. 15 years, message boy, was admitted to the Western Infirmary on 12th June, 1914, complaining of pain over the lower part of the chest.

History.—Seven months ago he was in bed for fourteen days with present symptoms. Three months ago he was in Oakbank

Hospital for ten weeks; his chief complaint then was tenderness over the umbilicus, constipation, alternating with diarrhœa.

Previous health.—Good.

Family history.—Two brothers died from unknown causes. Nothing else noteworthy.

Present condition.—Skin pale, with yellowish tinge; tongue furred; teeth bad; breath foul; no œdema.

Heart.—Normal to percussion and auscultation.

Lungs.—Normal.

Abdomen.—Liver can be felt about 1 inch below the costal margin; no ascites. The spleen (Fig. 1) is very large, occupying most of the left side of the abdomen; it is tender on firm pressure, especially about the umbilical region.

Nervous system.—Normal.

Urine.—Alkaline; turbid; contains phosphates, but no albumen, blood, or sugar.

Blood.—

Red cells,	4,000,000
Hæmoglobin,	28 per cent.
Colour index,	0·35
White cells,	7,800

Differential count (by Dr. M'Nee).—

Polymorphonuclears,	48 per cent.
Eosinophiles,	8 ,,
Mast cells,	2 ,,
Large hyalines,	5 ,,
Small lymphocytes,	23 ,,
Large lymphocytes,	12 ,,
Myelocytes,	2 ,,

Examination of blood corpuscles for fragility.—Lysis occurred in the control at 0·45 per cent salt solution (which is about normal). In the present case it occurred at 0·35 per cent salt solution, showing that there was a diminution in the fragility of the red corpuscles, *i.e.*, they were more resistant to hypotonic salt solution.

Note made by me on 24th June (two weeks after admission):—"From the point of view of diagnosis the following facts may be of service. There is a diminished fragility of the red blood corpuscles, which is in favour of splenic anæmia, as against von Jaksch's anæmia or hæmolytic jaundice. Urobilin is present in the urine, but there is no bilirubin in the blood serum (Dr. J. S. Dunn); this also is in favour of splenic anæmia. The blood picture is not unusual, although there is a normal number of white blood corpuscles instead of a leucopænia, which is customary in splenic anæmia. The anæmia is of the chlorotic type, the colour index being 0·35. The patient suffers from perisplenitis and the results of anæmia, but otherwise he has the appearance of health. There is no evidence of tuberculosis, and the Wassermann test is negative. There are no signs of rickets or worms. There have been considerable epistaxis and hæmorrhages into the skin, but no pigmentation. There is no enlargement of the

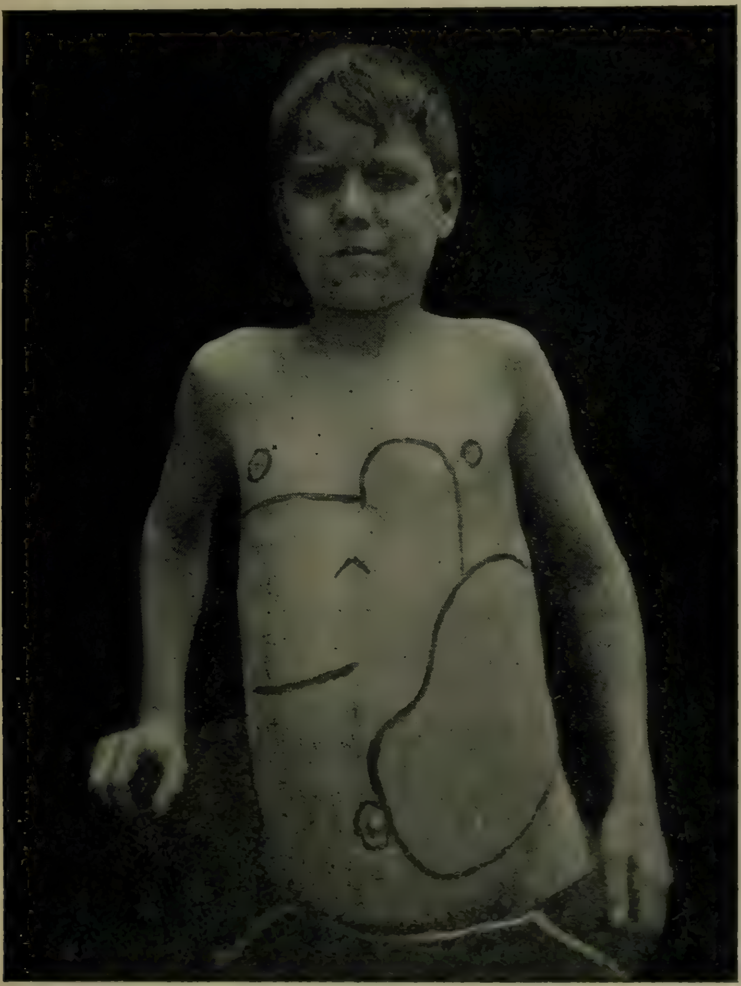

FIG. 1 (Case I, N·M'L.)

lymphatic glands. The liver is enlarged, but there is no ascites."

20th August.—Patient has had the usual medicinal treatment—cod liver oil, arsenic, and mild aperients—but since admission there has been little change in the blood or in the size of the spleen. Splenectomy is advised.

24th August.—The spleen was removed by Dr. Nicoll. The veins were very large, but there was little hæmorrhage. The operation revealed the enormous spleen, with perisplenitis and also some cirrhosis of the liver. There was little shock.

Pathological report on spleen.—"There is a distinct fibrosis of spleen, which is of firm consistence and weighs 2 lb. Microscopically, there is hyperplasia of the pulp, with marked increase in the connective tissue, and numerous recent hæmorrhages. The Malpighian bodies are not well defined. No cells characteristic of the Gaucher type of splenomegaly were found."

On the day after operation the blood was examined, when there was an increase in the red and white cells, but no visible normoblasts. (*Note.*—As a rule, there is a rush of normoblasts after splenectomy in cases of splenic anæmia—see next case.) The white cells were chiefly polymorphonuclears. The blood was examined every few days, and when he was dismissed from hospital on 17th September, 1914, the count was—

Red cells, ...	5,600,000
Hæmoglobin, ...	90 per cent.
Colour index, ...	0·8
White cells, ...	10,300

26th July, 1915.—To-day I have seen the patient. He looks well, and certainly has no anæmia from his appearance. He attends to his work, and only occasionally suffers from indigestion.

Remarks.—This case presents many of the characteristic features of splenic anæmia of the adult type—an anæmia of insidious onset, with enlargement of the spleen and with no enlargement of the lymphatic glands. The anæmia is of the chlorotic type, and the white cells are not increased. In this case there were 7,800 per c.mm. There is frequently a leucopænia, the white cells not numbering more than 3,000 or

4,000 per c.mm. There were no signs of tubercle, and the Wassermann test was negative. There was also a diminution in the fragility of the red blood corpuscles. The spleen was removed, as the case was diagnosed as splenic anæmia, and no improvement had taken place with ordinary remedies. It was removed when the boy was not too ill. In a few years, or less, it is likely that the cirrhosis of the liver, which was commencing, would have been considerable, and the train of symptoms that go to form Banti's disease would have occurred.

Another point which I think must be considered in advising splenectomy in splenic anæmia is the occurrence of hæmorrhage. In this case epistaxis frequently occurred, and also some ecchymosis into the skin; but there had not so far been the profuse hæmorrhages that so frequently occur from the œsophagus and stomach. It is better to operate when the vessels are in a fairly good condition and the patient's strength unimpaired. The spleen was easily removed. The veins were markedly dilated, but there was no sign of thrombosis of the splenic vein, which frequently causes splenomegaly. The danger of the operation is shock and hæmorrhage, but the death-rate in the Mayo Clinique is only 7 per cent. The special feature of interest is the great improvement in the blood condition after the operation—the increase in the red cells and hæmoglobin, and the improvement in the colour index from 0·35 to 0·8.

A year after the operation the patient looks in excellent health.

CASE II.*—*Splenic Anæmia—Splenectomy—Apparent cure.*

S. R., æt. 8 years, was admitted to the Western Infirmary on 26th July, 1912, complaining of weakness, breathlessness, and loss of appetite.

This girl was well until four years ago when she had attacks of diarrhœa, and gradually became anæmic. The anæmia deepened, hæmorrhages occurred into the skin and retina; but there was no hæmatemesis.

Heart.—Slightly enlarged; V.S. pulmonic murmur; blood pressure, 92 mm. Hg. (systolic).

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* This case has been reported in full in *Practitioner*, November, 1914.

Lungs.—Normal.

Digestive system.—Furred tongue; teeth bad; liver palpable below the costal margin; spleen enlarged, passing downwards to the umbilicus; no ascites; no enlargement of lymphatic glands; no enlargement of stomach.

Blood.—

Red blood corpuscles, ...	2,550,000
Hæmoglobin, ...	25 per cent.
Colour index, ...	0·5
White blood corpuscles, . . .	7,800

Differential count.—

Polymorphonuclears, ...	56 per cent.
Small lymphocytes, ...	36 ,,
Large lymphocytes, ...	2 ,,
Large mononuclears, ...	3·6 ,,
Mast cells, ...	1 ,,
Eosinophiles, ...	1·4 ,,

Anisocytosis, poikilocytosis, ghost cells, slight polychromatophilia, a few normoblasts, one questionable myeloblast. Wassermann reaction is negative.

On 16th August a portion of rib was excised and the bone-marrow examined. The appearance suggested a somewhat hyperplastic condition of the blood-forming tissues.

On 28th August the spleen was removed by Dr. Alex. MacLennan. The spleen was enlarged, and on section the lymph nodes were enlarged and prominent. The main departure from the normal, microscopically, was the presence of normoblasts and myelocytes, and an unusual number of polymorphonuclears and eosinophile leucocytes.

On 29th August, the day after operation, the blood showed a large increase in the red and white blood corpuscles, a marked polymorphonuclear leucocytosis, and a rush of nucleated red cells (normoblasts).

Differential count.—

Polymorphonuclears, ...	94 per cent.
Lymphocytes, ...	5·6 ,,
Eosinophiles, ...	0·4 ,,
Nucleated reds (normoblasts), . .	1,800 per c.mm.

The patient made an uninterrupted recovery, and before dismissal on 15th November the blood condition was—

Red cells, ...	4,890,000
Hæmoglobin, ...	75 per cent.
Colour index, ...	0·8
White cells, ...	12,000

A year after I heard that the patient had a good colour and was in perfect health.

Remarks.—The case presented many of the changes found in splenic anæmia. The case is discussed from the point of view of diagnosis in the *Practitioner* (November, 1914). It was therein considered that it might reasonably be diagnosed as splenomegalic anæmia, a term used by Dr. Parkes Weber to include cases where the blood changes were not typically those of splenic anæmia, where an icteric tinge of the skin is present with hæmorrhages and pigmentation, and where hæmolytic changes are not so marked as in acholuric jaundice with splenomegaly. The spleen was not large, and it was easily removed.

The chief point of interest in the case was the immediate effect of splenectomy. On the day after operation the red cells had increased from 2,550,000 to 4,650,000; the white cells from 7,800 to 34,800; an occasional normoblast had given place to a rush of these, averaging 1,800 per c.mm. The increase in the white cells was due to a great preponderance of polymorphonuclears, the increase after the operation being 40 per cent.

Another point in the case was that the bone-marrow was tapped before operation and found to be hyperplastic. Had it been aplastic, of course, the operation could not have taken place.

The patient made an uninterrupted recovery, and is still in the best of health.

Case III.—*Splenomegalic polycythæmia.*

F. R., æt. 50 years, a painter, was admitted to the Western Infirmary on 11th August, 1914, complaining of want of breath, weakness in legs, and swelling of abdomen.

History.—He dates the breathlessness to an attack of influenza four years ago, followed by pleurisy and pneumonia. He was off work for six months. Nine months ago he felt his legs getting weaker, and four months ago he noticed that his abdomen was enlarged.

Family history.—Nothing noteworthy.

Social condition.—He lives in a healthy place, 850 feet above sea level. He is a non-smoker and a teetotaller.

Present condition.—Patient has a healthy, weather-beaten appearance, unduly red and slightly cyanosed.* Temperature, 97·6°; pulse, 70; respirations, 24. Tongue furred; teeth bad; slight erythematous rash over body.

Heart.—Normal to percussion and auscultation. Blood pressure is high; arteries are not unduly thickened.

Lungs.—Normal.

Abdomen.—Enlarged, especially in its upper and left portion, owing to enormous spleen (see Fig. 2). Its longitudinal diameter is 12 inches, and its transverse 6 inches. The liver can be felt below the costal margin. There is no ascites, and nothing else noteworthy in the abdomen. The lymphatic glands are not enlarged.

Urine.—Normal, except for faint trace of albumen.

Hæmorrhoids are present. No pain along the shafts of the long bones.

Nervous system.—Normal.

Blood.—

Red corpuscles, ...	7,900,000
Hæmoglobin, ...	80 per cent or over.
Colour index, ...	0·5
White corpuscles, ...	30,000

Special report by Dr. Dunn on blood.—"Polychromatophilia is present in some red corpuscles. Poikilocytosis is hardly noted. Nucleated red cells are numerous—18 are seen in a count of 300 leucocytes, equal to 1,800 per c.mm. Of these, 10 are normoblasts and 8 megaloblasts, some of which are of the embryonic type.

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* His appearance closely resembles the drawing in colour of a similar case described by Lauriston Shaw and Herbert French, which appeared in *Guy's Hospital Reports*, vol. lxvii.

"*Differential count of 300 leucocytes* (Jenner).—

Neutrophile polymorphonuclears,	70·3	per cent.
Neutrophile myelocytes,	15	,,
Eosinophiles,	1	,,
Hyalines,	2	,,
Basophiles,	2·6	,,
Myeloblasts,	0·6	,,
Lymphocytes,	8·3	,,

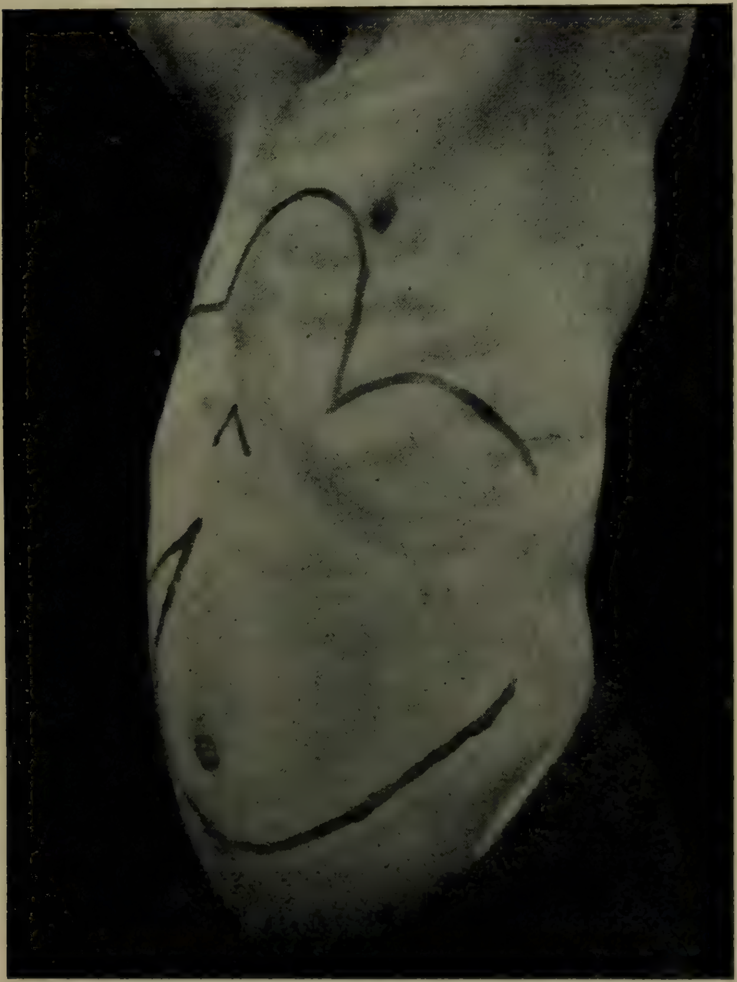

Fig. 2 (Case III, F. R.)

"The blood picture indicates considerable activity of the marrow of embryonic type. The case may be one of myeloid leukæmia, but is not certainly so."

No estimation was made of the total volume of the blood nor of its coagulability. The fragility of the corpuscles is very slightly greater than normal—lysis occurring in hypotonic saline solution at 0·55 per cent concentration, whereas the control lysed at 0·5 per cent.

Remarks.—This patient had an enormously enlarged spleen (see Fig. 2, p. 249), with cyanosis and a true polycythæmia. These symptoms are almost pathognomonic of the disease or symptom complex described by Parkes Weber under the title "splenomegalic polycythæmia." The red blood corpuscles were 7,900,000 per c.mm. in this case, but they have been known far to exceed this. The hæmoglobin was 80 per cent, whereas in some cases reported it has been as high as 150 per cent. The colour index, however, is usually below 1, as in this case. The patient's colour was red and swarthy, and slightly cyanosed. There were no enlarged glands, but a slightly enlarged liver.

Dr. Dunn's note on the blood condition is of interest. He found large numbers of normoblasts, a few megaloblasts, and 15 per cent of myelocytes, and he suggests that the case may be one of "myeloid leukæmia, but not certainly so." A few normoblasts and myelocytes are usually present in splenomegalic polycythæmia, and the increased number of leucocytes is due to excess in polymorphonuclears, as in this case. As against myeloid leukæmia is the low percentage of myelocytes, the few mast cells, the small number of leucocytes, with such a chronically enlarged spleen (30,000 against more frequently 300,000), *the increase in the red cells,* the absence of anæmia (in myeloid leukæmia, however, as Professor Muir has pointed out, the anæmia may be almost absent, differing from the lymphatic variety, where the myeloid tissue is replaced by lymphocytes, and the erythroblasts diminished in number). The cause of this erythroblastic activity is uncertain, but that a type of case does occur of a true polycythæmia with enlargement of the spleen is beyond question. The total volume of the blood is increased in this disease, as likewise the coagulability and viscosity. In this case the fragility of the red blood corpuscles was slightly increased.

Case IV.—*Hodgkin's disease.*

R. T., æt. 21 years, tailor, was admitted to the Western

Infirmary on 13th June, 1912, complaining of cough and spit, with breathlessness, of nine months' duration.

History.—Nine months ago patient noticed that his feet swelled, and he contracted a cold which caused him to cough and spit. His neck soon after commenced to swell, and gave rise to choking sensations. Eleven weeks ago he was in the Victoria Infirmary under Dr. Napier, who had one of the cervical glands removed. This was found to be a lymphadenomatous gland. He left the Victoria Infirmary three weeks ago improved, but still with cough and spit.

Previous health.—Apart from occasional colds, his health has always been good.

Social condition.—He lives in a comfortable house, and is well cared for. He neither smokes nor drinks.

Family history.—Nothing noteworthy.

Present condition.—There is marked pallor and puffiness under the eyes. He has lost 10 lb. in the last year, his present weight being 9 st. 6 lb. The muscles are flabby. No pigmentation of skin or hæmorrhages. Pulse, 82, and regular.

Heart.—Normal in size; a V.S. mitral murmur is present.

Lungs.—Cough is brassy in nature; sputum purulent and tough. Signs in the chest are normal, except at the right base, where there is dulness to percussion, and diminished R.M., V.R., and V.F.

Abdomen.—Liver extends 3 inches below the right costal margin. Spleen cannot be palpated.

Urine.—Normal.

Lymphatic glands.—On each side of neck, in both axillæ, and both groins are masses of glands; not greatly enlarged, painless, and soft (not fluctuant).

Blood.—In all respects normal, except for evidences of simple anæmia.

Eyes.—Fundi are normal; no hæmorrhages.

During his stay in hospital, despite ordinary treatment, he steadily became worse. The breathlessness was more troublesome, more paroxysmal in character, the cough worse, and on one occasion the sputum contained blood (considered to be due to infarction); the sputum was usually simply purulent, and never contained tubercle bacillus; the heart became weaker.

He left the hospital *in extremis* at his own risk.

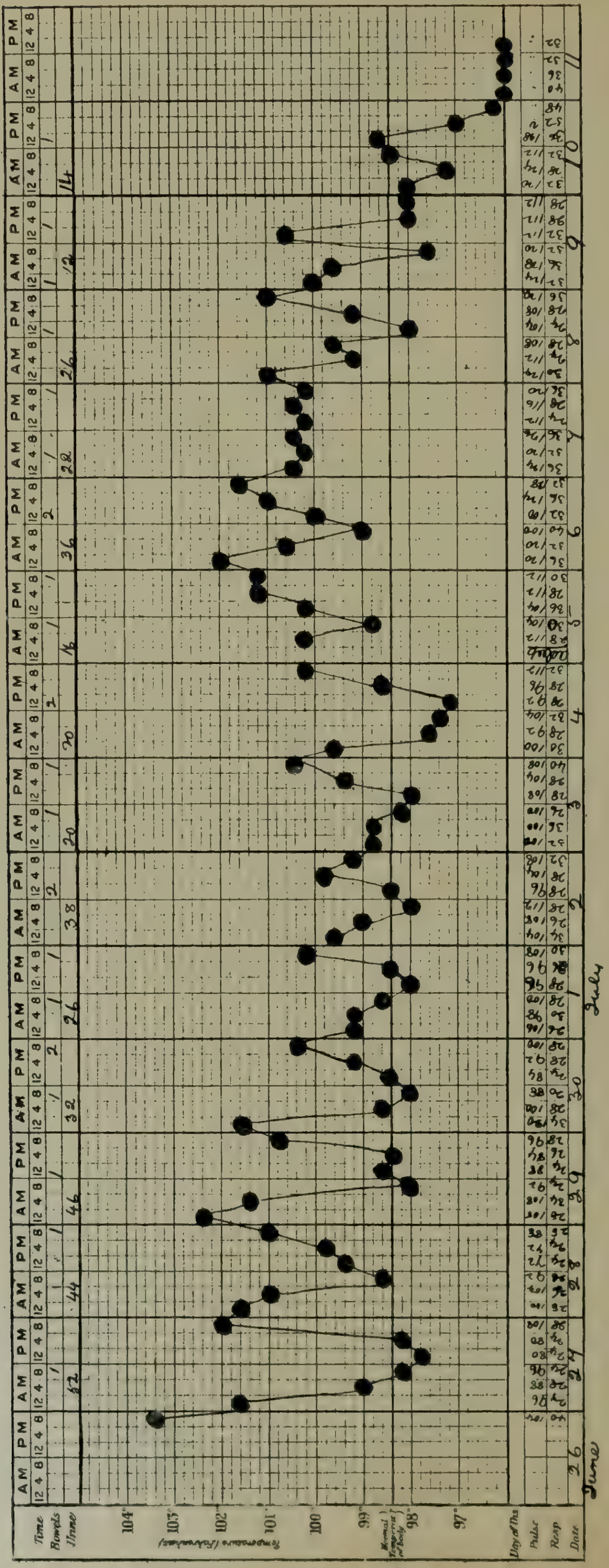

CHART 1 (Case IV, R. T.)

Remarks.—The characteristic features of the case were a progressive anæmia of the chlorotic type, wasting, fever (see Chart 1), and enlargement of the cervical, axillary, and inguinal glands; also enlargement of liver and spleen. There was no excess of leucocytes, and no relative excess of any of the different types of blood cells. There was no evidence of tuberculosis, except for the dulness at the base of the right lung; the dulness, however, was likely due to pressure from enlarged mediastinal glands. From the nature of the cough, its paroxysmal and brassy character, and the paroxysmal dyspnœa, it is evident that there was pressure on a bronchus. A gland was excised, and showed the characteristic features of lymphadenoma.

The patient was ill for nine months, and, from his condition on leaving hospital, it is not likely that he would live many days. The duration of the illness then would be about ten months.

CASE V.—*Hodgkin's Disease.*

J. M'I., æt. 32 years, mason, was admitted to the Western Infirmary on 31st May, 1912, complaining of general weakness of five months' duration.

History.—Enlargement of the glands of the neck first appeared six years ago. He attended the Western Infirmary Dispensary in April, 1912, under Dr. Cuthbert, who removed a supra-clavicular gland, and found it to be a lymphadenoma of the fibrous type. He has had no breathlessness or palpitation, and it is only during the last five months that he has felt weak and different from usual.

Family history.—One brother died at 23 years from the same trouble, he says, as he suffers from himself, otherwise nothing noteworthy.

Social condition.—A steady hard-working man. He never smokes or takes alcohol to excess.

Present condition.—There is general pallor. The glands in the left side of the neck are enlarged (supra- and infra-clavicular), and also those in the left axilla. He weighs only 7 st., having lost 2 st. in the last two years. Temperature, 100·5° F.; pulse, 92, and dicrotic; respiration, 24; skin is moist; blood pressure low.

Heart.—Normal to percussion. The first sound is soft in mitral area, and second sound accentuated in pulmonic area. *Bruit de diable* in the neck.

Lungs.—Normal, except for slight impairment of percussion note over the left infra-clavicular and infra-axillary regions.

Alimentary system.—Normal. Liver and spleen are not palpable.

Urine.—Normal.

Lymphatic glands.—On left side of neck, in both triangles, glands are greatly enlarged. They are well defined, hard, and painless. They are not adherent to the skin, and they join the glands below the clavicle on the same side and those in the left axilla. No glands can be seen or felt on the right side.

Blood.—

Red corpuscles, ...	2,650,000
Hæmoglobin, ...	45 per cent.
Colour index, ...	0·8
White corpuscles, ...	7,300

Nervous system.—Normal, except for tremor of the hands from weakness. Eyes are normal.

On 10th July the following note was made by me in the Journal:—"A rise of temperature at some period of the day has been pretty constant since admission, especially during the last two weeks (see Chart 2). There has also been a striking deterioration in the condition of the blood. The red cells have fallen to 1,840,000, and the hæmoglobin to 28 per cent. The patient's condition is critical. The loss of flesh is marked. The glands appear larger and softer, but no new glands are felt. Fluid has commenced to collect in the left chest. The liver has enlarged, and can now be felt below the right hypochondrium, measuring 6 inches in the nipple line. The spleen cannot be definitely demarcated owing to the effusion in the left chest. The abdomen generally is unduly tympanitic, the veins of the wall are prominent, but no thickened masses can be felt, nor is there evidence of ascites. There is no pain along the shafts of the long bones or over the sternum."

Patient got rapidly worse, the heart weakened, and anasarca set in.

He left the hospital in an ambulance *in extremis* on 30th July. He died a few days afterwards.

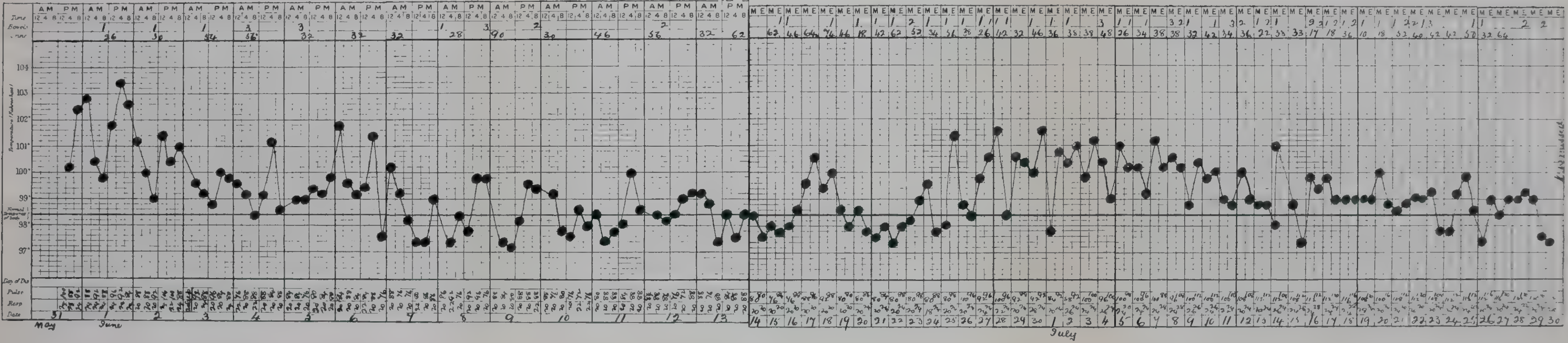

CHART 2 (Case V, J. M'I.)

Remarks.—This case, one of Hodgkin's disease, differs from the last in that it was of a more chronic nature, the original enlargement of the glands in the neck occurring six years ago. There was, however, an acute exacerbation of the disease, the anæmia in a few weeks becoming profound, and with it secondary symptoms of cardiac failure—general anasarca, ascites, enlargement of the liver, &c. In this case, a gland was excised, and found to be a typical lymphadenomatous gland of fibrous type. It was interesting that in this case the glandular enlargement was confined to the left side, as is frequently the case in this disease. The anæmia was of the chlorotic type, the white blood corpuscles presenting normal characters. There was marked loss of weight, and the temperature chart (see chart) was typical of this disease in its acute and terminal stages.

CASE VI.—*Lymphatic leukœmia* (*chronic type*).

A. W., æt. 40 years, a plater, married, attended the Outpatient Department of the Western Infirmary in June, 1908, complaining of "indigestion, swelling of the legs, enlarged glands of four months' duration, and cough of seven months' duration."

History of previous health.—Patient had measles when a child, no history of rheumatic, scarlet, or typhoid fevers. Never had pleurisy, pneumonia, or phthisis, and never subject to colds or to chronic cough.

History of present illness.—A little less than a year ago the patient had a short dry cough without expectoration. Four months ago he had an attack of what was thought to be "influenza," with fever, headache, sore throat, and increased severity of the cough. Shortly after this the glands in the neck swelled, and soon after swellings appeared under the arm-pits and along the sides of the thigh. The left testicle then swelled, and got as large as a small orange. He went to bed for four weeks and then returned to work, but after a few days he felt so weak that he had to go back to bed again, and has remained there almost continuously up to the present time.

Three months ago, shortly after the glands in the neck swelled, the cough was attended by expectoration, which at first was whitish, but latterly has become purulent and blood-tinged.

The bowels were always regular until the onset of the present illness, when diarrhœa has been a constant symptom. The motions were loose and light-coloured, and never black nor contained blood.

About a month ago the water became very scanty and high coloured, and left a thick reddish sediment. This condition of the urine was associated with considerable swelling of the legs, which has lasted more or less up to the present time, but there never was any puffiness under the eyes.

Patient has complained greatly of weakness and general inability to move about. There have frequently been severe darting pains in the abdomen and legs. Lately he has been troubled greatly with palpitation and breathlessness. At night he feels always hot and feverish, and before the morning he is usually bathed in perspiration. He has lost flesh greatly, and has now little appetite for food. He has lost 2 st. in weight during the last four months.

Family history.—Father died at 68 from old age. Mother died at 60 from dropsy, the result of some heart affection. Two brothers are dead, the one at 24 from rheumatic fever, and the other at 21 from an accident in a shipyard. Two sisters are dead, the one at 21 during childbirth, the other at 32 years from stomach affection.

There is no history of consumption in the family, and no member has been afflicted with any disease similar to his own. He has five children, alive and well; three died in infancy—one from measles with severe throat complication, another from scarlet fever, and a third at birth.

Habits and social surroundings.—He has never taken alcohol in excess, he has never had syphilis, but had a gonorrhœa a year and a half ago. He has always been well cared for, had plenty of food, and lived in a comfortable house with plenty air space.

Present condition (20th June, 1908).—Patient lies comfortably in the dorsal decubitus. He is very thin, with flushed cheek and highly injected capillaries of the nose and malar arches. The pupils are equal and respond correctly to light and visual distance. The pulses are equal on the two sides, numbering

90 per minute, the rhythm is regular and the tension is low. Blood pressure (Mummerie's modification of Riva Rocci) equal to 100 mm. Hg. maximum systolic pressure, and 80 minimum diastolic pressure. The finger tips are markedly clubbed, and the finger nails curved.

Glands.—On both sides of the neck, in both the anterior and posterior triangles, numerous glands can be seen and felt. These glands are almost painless to the touch, are isolated, and can be freely moved under the skin. They occur in clusters at places. Under the arm-pits, the glandular enlargements form almost tumour masses. A group of semi-elastic, painless, movable glands, more or less crowded together, can be felt in each arm-pit. A chain of similar glands can be felt along each inguinal region. There is no puffiness under the eyes, but there is distinct œdema on pressure along both tibiæ, and at the ankle joints. The testicles are similar on the two sides, and there is no evidence of any inflammation of epididymis or testicle, nor of hydrocele, or varicocele. There is no jaundice, and no pigmentation of the skin. No purpuric spots or ecchymoses. Weight is 8 st. 5¾ lb.

Throat and teeth.—The uvula is long and twisted, and the tonsils are very large. The teeth are excellent, and the gums are healthy.

Heart.—The cardiac measurements are normal, and no murmur is present. The veins of the neck are visible, and on coughing these become abnormally full.

Lungs.—Over the lungs generally there is an impairment of the percussion note, but there is no dulness. A few wheezing and mucous râles are detected over both lungs, but chiefly over the right base behind.

Abdomen.—There is a general fulness over the epigastrium. No enlargement of the veins over the abdomen, and no abdominal glands can be felt on palpation. There is no ascites.

The *liver* is much enlarged, extending from the fifth rib to a point well down below the costal margin. It measures 7 inches in the middle line, 7½ inches in the nipple line, and 7¼ inches in the anterior axillary line.

The *spleen* is enlarged, measuring 7½ inches in its vertical diameter. The lower edge of the spleen comes to a point 2 inches from the umbilicus.

The *kidneys* are not palpable.

Nervous system.—Knee-jerks are normal. No numbness or anæsthesia.

Expectoration.—This is gelatinous, nummular, and purulent, and contains much blood. No tubercle bacilli have been found in the expectoration.

Urine.—Specific gravity, 1032; yellow colour, slightly acid, it contains slight albumen but no sugar. Microscopically amorphous urates.

Osseous system.—No pain along the bones on deep pressure.

Blood (examination by Dr. Greenlees).—

Hæmoglobin, ...	70 per cent.
Red cells, ...	4,832,000
White cells, ...	57,000
Colour index, ...	0·7

Differential count.—

Lymphocytes and transitional forms, .	= 86·5 per cent.
Large hyaline, ...	= 2·5 ,,
Polymorphonuclear cells with a few eosinophiles, ...	= 13 ,,
	100 per cent.

A few myelocytes were seen, but no nucleated red cells or macrocytes or microcytes. Poikilocytosis is present.

The patient was transferred to the wards of the late Dr. Lindsay Steven, to whom I was indebted for following up the case further.

The blood was again examined (a week after the first examination) when the following differential count was made:—

Lymphocytes, ...	86 per cent.
Polymorphonuclears, ...	14 ,,
	100 per cent.
Colour index, ...	0·8

15th July.—The patient feels better after resting in bed, and getting cod liver oil and malt after food. The cough has been eased by doses of nepenthe. The liver and spleen, however, are larger, the liver measuring 8 inches in the axillary line, and the spleen 9 inches in its vertical diameter. The expectoration still contains much blood. Over the right base dulness can be made out, with tubular breathing.

Since admission into hospital the temperature has been pyretic. It is frequently above 100° F., but averages slightly over 99° F. The highest recorded temperature is 100·8° F.

Remarks.—This case, though in many respects resembling the two previous cases of Hodgkin's disease in their final stages, had one important distinguishing feature—the condition of the blood. The white cells were 57,000 in number, and of these 86·5 per cent were lymphocytes. The report, given pretty fully, records an accurate picture of lymphatic leukæmia. The chief features were enlargement of the lymphatic glands, enlargement of liver and spleen, a lymphocytosis, the history of diarrhœa, the continuous pyrexia, the anæmia, and the marked loss of weight. The illness was also characterised by cough, with intensely nummular blood-stained spit, which contained no tubercle bacilli. Hæmoptysis is not an uncommon symptom in this disease, due, as Professor Muir tells us, to leucocytic thrombi in the small pulmonary vessels with hæmorrhages around them. The patient left the hospital in an unsatisfactory condition. Still, from the degree of anæmia, death was not imminent. On the other hand, there was a falling off in the percentage of hæmoglobin and red corpuscles since admission, a continuous pyrexia and constant diarrhœa, symptoms which all pointed to impending dissolution.

CASE VII.—*Lymphatic leukæmia* (*acute type*).

J. R., æt. 22 years, was admitted to the Western Infirmary on 7th July, 1913, complaining of swelling of glands of neck, axilla, and groin, and swelling of abdomen of six weeks' duration.

History of present illness.—Six weeks ago patient felt his abdomen tense and had difficulty in bending forwards while at his work. Soon after he noticed that a gland was swollen in the right side of the neck. He steadily lost strength, but continued at his work until three weeks ago, when he had to give it up owing to weakness, and take to his bed. Since then the glands generally have become swollen, and those in the neck have become larger and more painful. His digestion has been poor, and he has been restless at night.

Previous health.—He has suffered from no illnesses up to his present ailment except scarlet fever when 8 years of age.

Family history.—He is one of a family of five, of whom one died in infancy; the rest are well. His father died from "inflammation of the lungs."

Present condition.—Tongue clean, teeth bad. There is general pallor. Muscles are fairly well developed but flabby. There is some tenderness along the ends of the long bones. Pulse, 96; respiration, 22; temperature, 100·6° F.

Heart.—Normal to percussion and auscultation.

Lungs.—Normal.

Abdomen.—There is a globular generalised swelling of abdomen, especially at upper part. The liver is enlarged and area of dulness measures 9 inches in the nipple line. The spleen is enlarged and measures 7 inches in its longitudinal diameter. Some ascites is present.

Lymphatic glands.—All the external glands in the body are palpable and enlarged. They are of greatest size in the anterior triangles of the neck, but are felt in bunches also in the posterior triangles, axillæ, and inguinal regions. They are soft and tender. No glands can be felt in the abdomen.

Blood.—

Red corpuscles, ...	3,000,000
Hæmoglobin, ...	55 per cent.
Colour index, ...	0·9
White cells, ...	78,000

Differential count.—

Large and small lymphocytes, . .	85 per cent.
Polymorphonuclears, ...	12 ,,
Myelocytes, ...	3 ,,

There are numerous normoblasts.

Urine.—Concentrated, but otherwise normal.

Note by me on 11th July, 1913.—It seems pretty certain that the patient's illness commenced only six weeks ago. Before

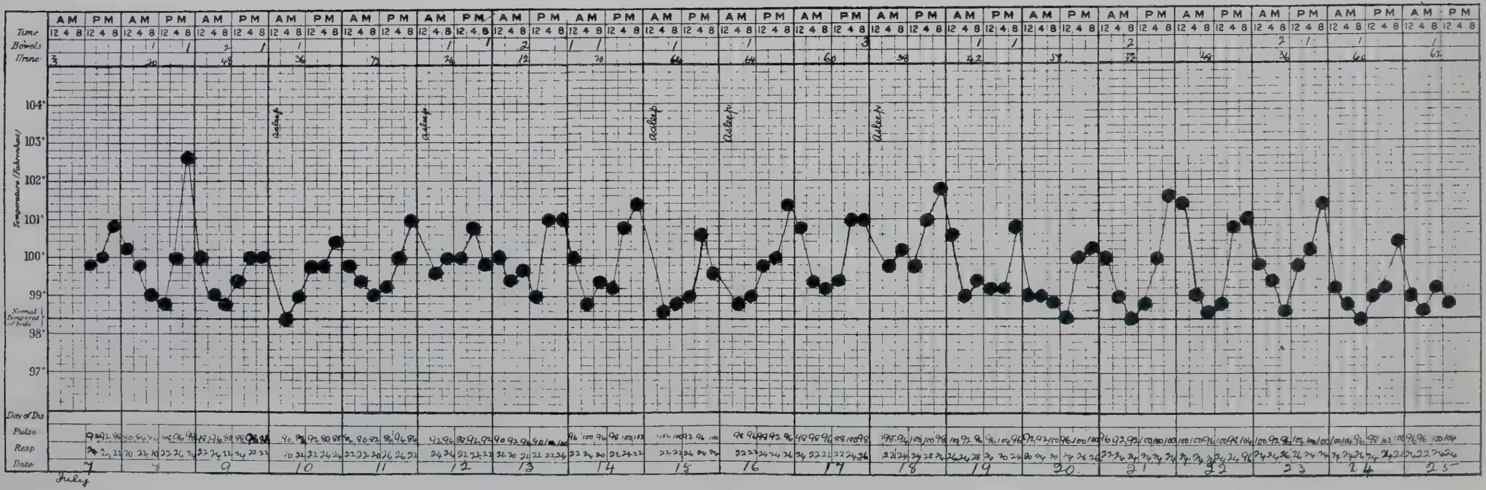

CHART 3 (Case VII, J. R.)

that he had always good health, except for an attack of scarlet fever fourteen years ago. He had no fright, but he injured his back ten weeks ago. The outstanding feature at present is the enlargement of the lymphatic glands, both external and internal. They pass round the neck like a collar (Hodgkin's collar), some larger than others, quite discrete, and some are soft and painful on pressure. These glands have not as yet caused any pressure symptoms, unless it be some deafness in the right ear (this latter symptom is often due to hæmorrhage rather than to the result of pressure). There is no pressure on a bronchus or evidence of mediastinitis.

In the abdomen the general enlargement and doughy feeling depends partly on the enormously enlarged liver and spleen, and also probably on the retroperitoneal glands. There is considerable anæmia of the chlorotic type. Blood films show marked increase of lymphatic cells. They are somewhat large in size. The white cells number to-day 75,000 per cm. The predominant cell is the small lymphocyte, but there is a considerable proportion of large lymphocytes and myelocytes. Nucleated cells are present. Apart from the anæmia and lymphatic enlargement, the outstanding symptoms are pain in the abdomen, sweating at night, dryness in the throat, some hæmorrhage from the gums, and a sense of weakness. There has been no diarrhœa, but since admission there has been constant pyrexia (see Chart 3).

The patient left hospital on 25th July, as he was no better. The blood count on his dismissal was:—

Red corpuscles, ...	2,500,000
Hæmoglobin, ...	30 per cent.
Colour index, ...	0·6
White cells, ...	40,000

Remarks.—This patient was apparently in good health until six weeks ago, when the first symptom was pain and fulness in the epigastrium. In cases of acute lymphatic leukæmia this is frequently the case, from enlargements of liver, spleen, or possibly glands. His glands then became generally swollen and he suffered from acute anæmia. Even during his stay in hospital—eighteen days—there was a great deterioration of the blood; the red cells fell from 3,000,000 to 2,500,000, and the hæmoglobin from 55 per cent to 30 per cent. The temperature was of the irregular oscillating type, and he was rapidly losing flesh and strength.

The condition of the blood was suggestive of the acute type of lymphatic leukæmia, *i.e.*, the presence of numbers of large lymphocytes and a few myelocytes and normoblasts. The bone-marrow was invaded by the white cells, as it usually is, especially in the acute cases. The blood picture showed that the disease was not likely primarily myeloblastic, but lymphoblastic.

An interesting point was the pain along the shaft of the long bones. I cannot remember whether there was tenderness over the lower end of the sternum, a point noted by Mosler * as a symptom frequently met with in acute lymphatic leukæmia.

Hæmorrhages frequently occur in these acute cases. Already in this case there were signs of stomatitis and bleeding from the gums, and it is not unlikely that before long hæmorrhages of a more severe nature might occur from stomach, bowels, or into the brain.

* See Muir's article in Allbutt and Rolleston's *System of Medicine.*

HÆMATURIA, A SYMPTOM: ITS CAUSES AND DIAGNOSIS, WITH A FEW CASES ILLUSTRATING SOME OF THE LESS COMMON LESIONS.

By DAVID NEWMAN, M.D., F.R.F.P.S.,
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(*Concluded from* p. 193.)

(*b*) *The admixture of other deposits with the blood.*—In many cases of hæmaturia the only abnormal constituent in the urine is blood, while in other cases it is mixed with pus, mucus, tuberculous material, portions of tumours or micro-organisms, the detection of which throws considerable light on the etiology of the malady. The mixture of the blood with deposits of another kind requires only to be mentioned here. A detailed description of the various deposits which may be found will be discussed further on. The three most common, however, may be noticed, namely, pus, mucus, and tuberculous *débris*. If the urine is placed in a conical glass and allowed to stand for a few hours, and the glass is then held up to the light, if pus be present in any great amount the deposits will be found in distinct layers like geological strata; the bottom of the glass is occupied by a yellowish deposit, which may be more or less blood-stained pus, or, in some cases of renal pyuria, the pus may carry down almost all the blood corpuscles so as to leave an almost quite clear supernatant fluid. When mucus is present, on the other hand, not uncommonly the blood corpuscles are thrown down first, forming a layer at the bottom of the vessel, and following on this may be seen a layer of glairy gelatinous material, which may have a reddish tint, or may contain a multitude of minute bloody streaks which intersect it and penetrate into all parts of this gelatinous layer. In such cases the hæmorrhage is usually due to some lesion in the bladder, and the presence of such an amount of mucus is generally indicative of a more or less acute vesical catarrh.

Tuberculous deposit can be distinguished by microscopic examination, by the cultivation of tubercle bacilli, or by inoculation experiments. Beyond demonstrating the presence of blood-casts of the uriniferous tubules, the microscope may reveal the existence of other elements of consequence in the deposit. For example, the character of the epithelium as derived from the renal parenchyma, from the pelvis, the ureter, or the bladder may greatly assist one in diagnosis; or, on the other hand, should the urine contain small fragments of tumours, parasites, or bacteria, the hæmorrhage may be explained.

(*c*) *The time at which blood appears in the stream.*—In order to ascertain the precise moment at which the blood appears in the stream, it is necessary for the surgeon to see the patient urinate, and to observe whether the colouration is equal during the whole continuance of micturition, or is more abundant at the beginning or at the end of the act. The appearance of blood at the beginning of micturition, the remainder of the flow being clear, is an indication of two distinct conditions—the lesion is either in the prostate, close to the neck of the bladder, or a malady or injury is present in the urethra.

When the hæmorrhage is due to injury or disease of the urethra, the nature of the lesion is generally clearly indicated by the circumstance that the blood is observed to escape quite independently of micturition; sometimes, indeed, blood is seen to flow from the meatus spontaneously. In cases of tumour of the bladder, and also in vesical calculus, the hæmorrhage is most profuse at the end of micturition.

(*d*) *The frequency and duration of the attacks.* — While nothing absolutely definite can be ascertained by a close observation and study of the frequency and duration of the hæmaturias, still, considerable help may be got in this way to aid in a diagnosis. For example, in many cases of renal hæmaturia the blood may suddenly appear and just as suddenly vanish, soon to be followed by a profuse recurrence; such sudden changes are in some cases accompanied by the expulsion of long worm-shaped clots, and in such instances we may reasonably conclude that the sudden clearing of the urine has been due to the ureter being obstructed. The blood has coagulated within its lumen, and when the clot becomes displaced a fresh, and often apparently very profuse, escape of blood is observed.

This sudden appearance and disappearance of blood is seen in cases of movable kidney with torsion of the renal veins; also in renal calculus, in tumours in the pelvis, and aneurysm of the renal artery.

When hæmaturia comes on without being evidently provoked, we may generally surmise that the lesion giving rise to it is a serious one, although we may not be able to judge its site. In advanced malignant disease, and in soft papilloma at the neck of the bladder, the presence of blood is generally very persistent, without intervals, and of long duration, so that the patient may become very anæmic from loss of blood.

Again, on the other hand, we meet with cases where hæmaturia more or less profuse has recurred at frequent intervals, but the duration of the attacks has been short, and the intervals between them marked by complete absence of any blood in the urine. This is usually seen in tumours of the bladder well away from the neck. Sometimes there may be periods of relief extending over several weeks, or even months, and usually any fresh recurrence of bleeding can be explained by excessive exercise or unwonted freedom of movement on the part of the patient. If these conditions be associated with the absence of vesical symptoms, the strong presumption is in favour of the hæmorrhage being renal in origin, and against the hypothesis that the blood is flowing from an ulcerated surface. The total duration of the symptoms is also an important guide to the benign or malignant nature of the malady giving rise to it. The long presence of a stone in the renal pelvis may, after causing occasional hæmaturia for years, be followed by the formation of a carcinoma.

(*e*) *The effects of movement, or exercise, or of complete rest in the course of an attack.*—When complete rest is taken, hæmaturia due to the presence of stone in the renal pelvis, in the bladder, or in the prostate is generally more or less relieved; so also in hæmorrhage observed in cases of movable kidney, or in passive hyperæmia of the kidney resulting from pressure on the renal veins. In such cases it is repeatedly observed that the blood is most abundant in the urine at night, when the patient has been taking active exercise during the preceding day, while, at the same time, the pain in the renal region or irritability of the bladder is increased.

It must, however, be also borne in mind, in exceptional instances, that in hæmaturia from an abraded surface, as in carcinomatous or tuberculous ulceration, or in senile prostate, the bleeding occasionally may not be increased by exercise; but, as a rule, if the hæmaturia persists in spite of prolonged rest in bed, and especially when the bleeding is more abundant during the night than at other times, carcinomatous, sarcomatous, or tuberculous ulceration is to be looked for.

2. *By collecting the urine separately from the two ureters or by observing blood escaping from the orifice of a ureter.*— Various procedures have been employed to ascertain whether the blood originates in the bladder or flows into it from one of the kidneys, and methods have also been devised to ascertain the nature of a vesical lesion. Examination of the bladder by means of the sound, the catheter, or with the finger have been at different times suggested and carried out in practice. When one reads Sir Henry Thompson's[18] description of how exploration of the bladder with the finger should be carried out, the marvel is that the injury done to the patient was not appalling. He introduced the *left forefinger into the rectum* as a guide to the incision of the bladder, and when the incision was completed the same finger (the left index), presumably without being cleaned, was used in exploring the bladder. Sir Henry Thompson[19] went further than this, and proposed that portions of a growth might be removed from the main mass by means of a lithotrite and submitted for microscopic examination, surely overlooking the fact that pieces of a growth removed by a crushing instrument must have lost their histological characteristics, and hence have been rendered valueless for diagnostic purposes.

Again, Kuster has employed a curette, and Chismore used a calculus aspirator for diagnostic purposes. The use of such imperfect methods is to be condemned, seeing that we have at our disposal the electric cystoscope and ureter catheters; but in order to employ these instruments the surgeon must educate himself in their use, just as in the use of any other instrument of precision. When the cystoscope is properly employed the examination subjects the patient to no risk—less, indeed, than the use of a sound. The sound is too frequently employed in cases of hæmaturia. It is only when the bleeding is the result of a vesical calculus, or an enlarged prostate, or a hypertrophy of the bladder that any reliable information can be obtained by the employment of the sound; and when the hæmaturia is due to other lesions much harm may be done by the rough manipulation necessary to examine the bladder with that instrument. The educated use of the cystoscope being more gentle, is less dangerous, and it is more valuable, but it should always be used with strictly aseptic precautions. It must be remembered that where the bladder or other portion of the urinary tract is the seat of disease, the risk of septic contamination is much greater than when these parts are normal, and when septic contamination does occur the gravity of the condition is proportionately greater.

By making careful examination with the cystoscope it is usually easy to ascertain whether or not the blood is from the bladder, but in a few instances it is not safe to conclude from the fact of no lesion being observed in the bladder that the hæmaturia is therefore either renal or ureteral in its origin. When, however, the blood is seen by the cystoscope flowing from the orifice of a ureter, or more rarely from both ureters, the observation is of the highest importance as indicating the source from which the blood comes. The appearances will be described in detail under diagnosis.

Catheterisation of the ureters.—This method of examination is not so necessary in cases of hæmaturia, nor is it so reliable as in those of pyuria; not necessary because, generally, if the hæmaturia is purely renal the escape of blood from the ureter can be readily seen by means of the cystoscope, and not reliable because the use of the catheter may cause hæmorrhage.

Catheterisation of the ureter in the female has been much simplified by Kelly, of Baltimore.[20] The essential feature of this method is that of the introduction of a straight speculum into the empty bladder. The walls of the viscus are slightly separated by the position assumed by the patient, the dilatation being such as to bring the orifices of the ureters into view when reflected light is thrown into the bladder by a forehead mirror. Those who desire to catheterise the ureters must carefully study their direction in the various parts of their course, and must always remember that gentle manipulation is of the highest importance. The various instruments employed, and methods of using them, have been already described. Some surgeons, however, who do not take the trouble to gain the necessary dexterity in the use of such instruments, are apt to condemn them or to entrust them to experts only, but the use of the cystoscope and the catheterising cystoscope will become more general, just as the ophthalmoscope, laryngoscope, and rhinoscope have ultimately asserted their position as aids in diagnosis. In catheterising the ureters it must be borne in mind that rough introduction of the catheter may of itself lead to hæmorrhage, and certainly this is a drawback to its use, especially when the catheterised ureter is the seat of inflammation. In the female the procedure is easily carried out, and the results are tolerably certain; but in the male, even when one succeeds in introducing the catheter into the ureter, it is difficult to say to what degree the results obtained are to be relied upon.

3. *By estimating the quantity of hæmoglobin, and comparing it with the amount of albumen in the urine.*—Urine containing blood is always albuminous, but the relative proportion existing between the red corpuscles and the serum depends upon whether or not the hæmorrhage is associated with inflammation. For example, in acute nephritis the general inflammatory hyperæmia causes large quantities of albumen to pass into the urine independently of the hæmorrhage. The relationship between the quantity of hæmoglobin and the amount of albumen in the urine will therefore aid one in determining the seat of the hæmorrhage. In 1880 the writer showed at a meeting of the Glasgow Pathological and Clinical Society an apparatus for estimating by a simple method the quantity of hæmoglobin in solution. The quantity of hæmoglobin having been estimated and the amount of albumen determined by one or other of the

recognised processes, the two results should be compared. If the ratio of albumen to hæmoglobin is as 1 to 1·6, then it may be concluded that the appearance of albumen is entirely due to the presence of blood; but if the quantity of albumen is much increased beyond the proportion just mentioned, the indication is in favour not only of an independent albuminuria, but also of a renal affection as the cause of the hæmaturia.

Another method is the one proposed by Goldberg. The number of blood corpuscles present in the urine should be counted by means of a Thoma-Zeiss blood-counting apparatus. When the number of red blood corpuscles is below 3,000 per c.c., the quantity of albumen contained in the blood is too small to be detected by ordinary clinical methods. Now suppose the urine contains a much larger number of corpuscles, albumen is easily discovered to be present. The number being ascertained, the urine is diluted down so as to contain 3,000 corpuscles to the c.c. Albumen is again tested for, say by Heller's test, and if a distinct ring of albumen shows itself then it may be inferred that the whole of the albumen present is not due simply to the bleeding.

4. *By carefully considering all the other objective and subjective phenomena.*—The questions which have been considered up to the present give but a rough sketch; the detail requires to be carefully filled in before the picture is completed. In order to do this the practitioner must consider the most common sources of hæmaturia, and enumerate the various lesions of the kidneys, the ureters, the bladder, the prostate, the urethra, and the testicles which may give rise to the symptom under discussion. It is well always to conform to this rule in going over the etiological factors which have been indicated above.

Diagnosis, in cases where the bleeding is the only symptom, will first be discussed, and will include hæmaturia from (*a*) passive hyperæmia, (*b*) renal varix, (*c*) tumours in the pelvis, (*d*) aneurysm of the renal artery, (*e*) calculus, and (*f*) early renal tuberculosis.

In all cases of symptomless hæmaturia it is advisable to have a systematic examination made by the cystoscope, the *x*-rays, and by bacteriological methods, over and above the chemical and physical examination of the urine.

(*a*) and (*b*). *Renal varix and passive hyperæmia as causes of hæmaturia* must be considered together, as often the former is the result of the latter.

Although the bleeding is almost constant, difficulty may be experienced and frequent examinations may be necessary before the blood is actually seen escaping from the ureteric opening. In these cases, as there are no symptoms or physical signs to help him, the cystoscope is of the highest value in enabling the surgeon to know which kidney is diseased. Cystoscopic examination should be made both during hæmorrhages and in the intervals between them; the clinician should never be satisfied with one observation, however satisfactory and conclusive it may appear. The shoots from the congested kidney are frequent, strong, and small, whereas from the opposite ureter, if its kidney is healthy, the shoots are larger, less forcible, and less frequent. Generally the ureteric opening on the diseased side is altered; it may be small, sharply defined, and the lips injected; or the edges may be swollen, œdematous, and stained with blood; or small blood-clots may be seen adhering to the opening.

When hæmaturia is present, clear bright-red blood escapes from one ureter in a plainly defined stream, and not infrequently the ureter may be seen distended with blood-clot, which forms a mould of the duct, which may be forced into the bladder by pressure of the hand over the kidney, and its dislodgment is followed by the escape of a large quantity of blood which suddenly obscures the view.

With a healthy kidney the ureteric opening is practically always healthy, and the mouth of the ureter may remain normal while the kidney is diseased; indeed, very severe bleeding may be seen passing through a typically healthy orifice. As a consequence, repeated observations must be made before it can be assumed that the blood is escaping from one ureter only.

Having ascertained that one kidney is diseased and the other healthy, and being assured, by watching and by carrying out suitable treatment, that the bleeding cannot be permanently checked by simple means, an exploration should be considered, and, if the conditions are favourable, be made as soon as possible.

No doubt in the kidney, as elsewhere, passive hyperæmia may lead to varices in the pelvis, but it is equally true that in many instances prolonged congestion may exist without the development of any varix.

(*c*) *Growths in the renal substance or in the pelvis.*—When the bladder is known to be free from disease, and the blood is seen escaping from one ureter only, it is the absence of other symptoms and signs that leads to the suspicion of the hæmaturia being due to tumour. The bleeding is rarely severe in the early stage, and considerable intervals may elapse between the early hæmaturias; but as time passes the bleedings tend to be more frequent and larger in amount. The urine is free from pus, but cylindrical or pavement epithelium, blood-casts, or even small fragments of the growth, may be found in the excretion. The absence of pyuria is significant; also the circumstance that no shadow is obtained with *x*-rays. It is very difficult, one may say impossible, to distinguish between a tumour originating in the substance of the kidney and one occupying the renal pelvis. The diagnosis must be made by a method of exclusion supplemented by exploration.

The cystoscope does not help the surgeon much beyond locating the lesion. The orifice of the ureter on the affected side may be normal; but in some instances the lips are swollen and blood-stained, and the slit elongated. There may be small sub-mucous hæmorrhages in the mucous membrane of the lips. The urinary shoots from the diseased kidney are coloured with blood, and the colouration may be deepened by manipulating the affected kidney; but even when the kidney is freely handled the excretion comes away in small shoots at regular intervals.

(*d*) *Aneurysm of the renal artery occupying and rupturing into the renal pelvis.*—Large aneurysms may be diagnosed by the presence of swelling, detected by palpation, tenderness on pressure, pulsation and the existence of a bruit, best heard in front. But in the cases referred to in this article, small sacciform aneurysms, no symptoms whatever beyond the bleeding were present to aid a diagnosis.

The cystoscopic examination revealed one peculiar feature, namely, that when interrupted pressure was made with the kidney between the hands, one behind, another in front, every time pressure was made a quantity of blood was seen to flow into the bladder, and when the pressure was withdrawn the flow ceased. This is found in no other condition. It is true that in tumours of the kidney manipulation increases the bleeding; but the blood in such circumstances comes away in regular small shoots and at stated intervals, whereas in aneurysm the blood flows as if it was being squeezed out of a rubber syringe; it wells out in a steady even stream.

(*e*) *Calculus without pain.*—While it is generally recognised that a stone may be impacted in the kidney without giving rise to symptoms, on the other hand it is held that bleeding due to calculus is always associated with pain. Fenwick[21] goes so far as to say:—"Stone in the kidney of an adult very rarely produces blood without pain being experienced at some time or other in the course of the case" . . . "in nearly every instance definite and characteristic renal pain has preceded the blood, or has followed it so rapidly that a correct clue as to the site and cause of the bleeding was obtained."

Undoubtedly it is the rule that in renal calculus pain and bleeding go together, but it is a point to be enforced that the absence of pain does not preclude calculus as a cause of the hæmaturia.

In these cases the suspicion of a stone being the cause of the bleeding may not arise, because of the belief that calculous hæmaturia is always associated with pain. In all cases of hæmaturia, an *x*-ray examination should be made by an expert.

Beyond the presence of an abnormal amount of mucus and epithelial cells, there are usually microscopic quantities of pus, which are absent when the bleeding is due to a small papilloma, renal varix, or an aneurysm of the renal artery.

Cystoscopic examination.—The blood-stained shoots come from one ureter only, which of itself locates the side on which the disease exists, also there are other indications which may help in judging of the condition. In calculus the ureter orifice usually becomes altered, sometimes the lips are thickened and irregular, and the orifice dilated or elongated, while, as a rule, the urinary shoots are more frequent and smaller in size than those from the ureter on the healthy side, often in the proportion of five to three.

(*f*) *Early renal tuberculosis.*—In tuberculosis the hæmaturia is seldom severe or protracted, is frequently absent for long intervals, is not increased by exercise or relieved by rest, and on standing the corpuscles and colouring matter are not completely precipitated from the urine. The urine is acid, low in specific gravity, and deposits minute quantities of pus cells which fall to the bottom of the glass. No *x*-ray shadow is found, and an inoculated guinea-pig develops tuberculosis within three weeks.

In cases of early tuberculosis with small repeated hæmaturias, a careful examination of the bladder may afford useful and reliable information, not only in a negative way by eliminating lesions of the bladder from the diagnosis, but also by giving positive evidence of the presence of tuberculosis in a kidney.

When a kidney is tuberculous the orifice of the corresponding ureter indicates clearly the nature of the lesion, and this happens in several ways—by changes in the colour and contour of the lips of the orifice; by the size, frequency, and regularity of the shoots; and by the character of the urine which escapes.

From ocular inspection, if carefully carried out by an educated eye, exact conclusions may be drawn which cannot be arrived at by other means, and the course of treatment can be decided upon early in the disease. By so employing this method most valuable time may be utilised which would otherwise be wasted waiting for other evidence to prove the nature of the renal lesion. Too often, when we wait until the subjective symptoms are sufficiently significant to form a basis for diagnosis, the disease has advanced beyond our power to remedy.

Fenwick and Meyer are right when they assert that the appearances of the ureteral orifices are so characteristic that they act as a reliable guide, not only as to the nature of the disease, but also as to the existence of tuberculosis of the kidney on the side on which they are found.

Experience has led the writer to the following conclusions in cases of primary renal tuberculosis:—(1) When the orifice of the ureter is strictly normal, no serious disease exists in the corresponding kidney; (2) when the kidney is normal the orifice of the ureter is also normal; (3) when there is evidence of tuberculosis at the orifice of the ureter, there is always associated with it tuberculosis of the corresponding kidney; (4) in tuberculosis of the bladder, the ureter does not become involved if the corresponding kidney is free from disease.

To state the position briefly from the clinical standpoint:—(1) When one ureteral orifice is altered while the other is normal, the renal lesion is on the side of the morbid ureter; (2) the deformity of the orifice and the lesions there indicate the nature of the renal disease; (3) the character of the urine escaping from the ureter denotes the morbid changes taking place in the corresponding kidney; (4) the frequency, size, and regularity of the "shoots" from the two orifices indicate the functional activity, or the presence of undue irritation, in the respective kidneys.

The first axiom is not yet sufficiently recognised; but now urological surgeons are coming to appreciate the significance of this sign of disease.

In early tuberculosis the lesions at the orifices vary somewhat, but they always show some deformity or distortion of the mouth, and usually thickening or retraction of one or of both lips.

These are the cases which, because of the absence of other symptoms, present the greatest difficulties in diagnosis. When other characteristics of disease are present, the task of making a diagnosis is greatly simplified. The lesions which come under this heading are (*a*) renal calculus, (*b*) tumours, (*c*) tuberculosis, (*d*) injury, (*e*) polycystic kidney, (*f*) hydronephrosis, (*g*) adrenal tumours.

(*a*) *Renal calculus.*—In addition to what has been already said, it is only necessary to remark that calculus is liable to be overlooked only when pain is absent. When the pain is increased by exercise or by manipulation, and relieved by rest, while at the same time the quantity of blood diminishes, the diagnosis is in favour of calculus. Pyuria is often present. On cystoscopic examination the alterations referred to above are found, and shoots of abnormal urine may be seen escaping from the ureter on the affected side. No tubercle bacilli are found in the urine, but a shadow of the stone is seen on x-ray examination. This not only locates the stone, but also shows its size and indicates its composition.

(*b*) *Tumours.*—Hæmaturia without pain is the prominent feature in the early stages, and in the later suffering is complained of only when the ureter becomes blocked, or when the tumour becomes so large as to cause pain from pressure on the lumbar plexus. The bleeding is from one ureter—at first seldom, small in quantity, spontaneous, afterwards frequent and severe, ultimately continuous and alarming. There is in the later stages a swelling, bulging posteriorly, and covered in front by the colon; the swelling retains the usual form of the kidney, extends from under the ribs, is dull behind and resonant in front, and there is no fluctuation. There is no shadow with x-rays, and there are no tubercle bacilli in the urine. Temperature normal.

(*c*) *Tuberculosis* of the kidney, unless complicated by disease in the bladder, seldom gives rise to serious hæmorrhage. The bleeding is usually slight, and is associated with polyuria and pyuria. Cystoscopic examination shows changes in the ureter orifice on the affected side, and the shoots are increased in number. There are frequent micturition, tenderness over the lumbar region increased on pressure, and occasionally severe pain from blocking of the ureter, associated with elevation of temperature and rigors. Swelling in the lumbar region, dull behind, resonant in front, may be irregular in form and variable in degree of resistance. Tuberculin reaction positive, tubercle bacilli in urine. Temperature febrile. Increased resistance to x-rays in parts, the shadows poorly defined.

(*d*) *Injury* often gives rise to serious hæmorrhage, but the diagnosis is very evident. The history is of a lumbar sprain or blow, often with evidence of violence elsewhere. There may be rupture of other internal organs, especially the spleen and liver. Renal colic may be caused by clots forming in the pelvis or ureter.

(*e*) *Polycystic kidney* is seldom indicated by severe bleeding; generally the hæmaturias are neither frequent nor serious; the urine is large in amount, of low specific gravity, and contains more albumen than is accounted for by the blood. No pus nor organisms. Cardiac and arterial changes may help to show the nature of the disease. There is a large non-fluctuant rounded swelling in one or both loins, nodulated, renal in form, and not painful on pressure. Temperature normal.

(*f*) *Hydronephrosis* seldom gives rise to bleeding, and then only after sudden relief of great distension, so that the history usually points to the hæmaturia following relief of severe pain and the passage of a large quantity of urine. Fluctuant swelling in the lumbar region, coincident with diminution in excretion of urine, and severe pain in lumbar region. Relief of pain preceded by escape of large quantity of clear urine of low specific gravity, and followed by the excretion of blood-stained urine. Injections through ureter catheters of collargol into the renal pelvis demonstrate with the x-rays the extent of the distension

(*g*) *Adrenal tumours* very rarely cause hæmaturia, so that the presence of blood in the urine is rather against than in favour of the diagnosis.

The lesions of the bladder causing hæmaturia are (*a*) tumours, (*b*) cystitis, (*c*) calculus, (*d*) enlarged prostrate, (*e*) varicose veins, (*f*) diverticulum.

The diagnosis of vesical lesions rests now almost entirely upon the cystoscopic appearances, but while this is so, it may be well to point out the distinguishing features of the lesions enumerated.

(*a*) *Tumours.*—The hæmaturia is at first without pain, and, as a rule, consists of the passage of a few drops of pure blood at the end of micturition. Later the bleedings become more frequent and severe, and ultimately the bladder may be filled with blood-clot. There is frequent micturition without pyuria or crystalline deposit, and no shadow with x-rays. Small portions of growth may be passed. Cystoscope clears up the diagnosis.

(*b*) *Cystitis.*

1. *Septic cystitis* is characterised by pyuria, with great increase in the mucous secretion; also by pain, local and reflex, frequent micturition, and when the reaction is alkaline, the blood colouring matter is well suspended in the urine, not readily forming a deposit. Pyogenic organisms are abundant in the urine.

2. In exfoliative cystitis bleeding may be severe and prolonged, as a consequence of the intense bacterial action and the decomposition of the area. The symptoms are those of a very aggravated cystitis—severe pain, very frequent micturition, highly alkaline urine, almost constant but not necessarily severe hæmaturia. A cystoscopic examination is difficult to obtain because of the contracted and irritable condition of the bladder, but when successfully used the diagnosis is easy. The bladder is covered with granulation tissue, coated here and there with encrustations of phosphates.

3. Syphilitic ulceration is rare, but can be recognised by the characteristic appearance of the ulcers. The ulcer is generally round, the edges are sharply defined and indurated, the surface irregular or covered by a greyish-yellow slough, and the ulcer is surrounded by a bright ring of congested mucous membrane. Wassermann reaction positive, and the symptoms of cystitis are not marked unless a mixed infection exists.

4. Tuberculous cystitis is characterised in the early stages by polyuria and repeated small hæmaturias; frequent micturition, at first without pain, afterwards with severe pain in the urethra and at the point of the penis during and after micturition; slight pyuria in acid urine, with tubercle bacilli, and evidence of tuberculosis elsewhere, probably in one or both kidneys. Remission of symptoms for longer or shorter intervals, but when mixed infection occurs the symptoms become suddenly aggravated and the hæmaturia more profuse and constant.

(*c*) Calculus gives rise to hæmaturia at the end of micturition, accompanied by pain, which is increased by movements and relieved by rest; pyuria, and a crystalline deposit in the urine, frequent and painful micturition, and an x-ray shadow. With the cystoscope the size, form, and probable composition of the stone are seen.

(*d*) Enlarged prostate gives rise to a painless hæmaturia, which is terminal like the bleeding in vesical calculus, but differs from it in not being increased by exercise and lessened by rest. There is frequent, but not necessarily painful, micturition, and in the absence of cystitis the urine is free from pus or deposit. A rectal examination, followed by a cystoscopic inspection, clears up the diagnosis.

(*e*) and (*f*) Varicose veins in the wall of the bladder and diverticulum can be diagnosed only by the cystoscope.

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[18] *On Tumours of the Bladder*, London, 1884, p. 17.
[19] *Brit. Med. Journ.*, 1890, vol. ii, p. 332.
[20] *Twentieth Century Practice of Medicine*, 1895, vol. i, p. 675.
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Obituary.

ON SERVICE.

Captain HUGH COCHRANE STORRIE, M.D. Glasg., Royal Army Medical Corps.

We regret to announce the death of Captain H. C. Storrie, R.A.M.C., who was killed in action in France on 12th September. He was the second son of Mr. Storrie of Southpark House, Paisley, was educated in the Paisley Grammar School, and received his medical training at the University of Glasgow, where he took the degrees of M.B., Ch.B., in 1908, and that of M.D. in 1913. After his graduation he acted as house surgeon in the Western Infirmary, and subsequently as house physician and house surgeon in the Royal Infirmary and as house surgeon in the Maternity and Women's Hospital, Glasgow. At the outbreak of war he filled the position of assistant medical officer in the fever service of the Metropolitan Asylums Board, from which he joined the army in September, 1914. He was attached to the 2nd Queen's West Surrey Regiment, went to the front in May, and was promoted to the rank of Captain in July. A letter from a brother officer to Mr. Storrie narrates the manner of his son's death. The battalion had gone forward and taken part of the trenches assigned to them, and, as he sat down to tea, Captain Storrie was informed that one of their men had been badly wounded by shell fire. He went at once to the soldier's assistance, and while about to enter the trench received the full force of a shrapnel shell which burst beside him, and was instantly killed. Captain Storrie, whose gallant death will be remembered with sorrowful pride, was 30 years of age.

Lieutenant JOSEPH M'GOWAN, M.D. Glasg., Royal Army Medical Corps.

We regret to announce the death of Lieutenant M'Gowan, R.A.M.C., which occurred at Malta on 18th September. A native of Kirkintilloch, Lieutenant M'Gowan studied medicine at Glasgow University, taking the degrees of M.B., C.M., in 1896, and going on to the M.D. degree in 1905. Seventeen years ago he settled in practice in Grangemouth, where he soon became prominent both in his profession and in the public and benevolent work of the town. He was medical officer under the Parish Council to the northern district of Grangemouth, and also to the Shipping Federation; he was actively interested in politics, being chairman of the local Liberal Association; and he was largely instrumental in furthering educational objects, serving for many years upon the School Board, of which he was chairman for three consecutive terms. Joining the R.A.M.C. in April, he was for a short time stationed at Inverness, and was then transferred to Malta, where he succumbed to an attack of dysentery.

JOHN IRVINE MACMILLAN, M.B., C.M. Glasg.,
Laurencekirk.

We regret to announce the death of Mr. J. I. Macmillan, which took place at Perth on 10th September. Mr. Macmillan was a native of Girvan, where his father, the late Mr. Alexander Macmillan, carried on an extensive milling business. Coming to Glasgow University for study, he took first the M.A. degree and, in 1897, the degrees of M.B., C.M. He settled in Laurencekirk some fifteen years ago, and built up an extensive practice in the town and surrounding district. He died suddenly, at the age of 46, while on his way to Edinburgh for a short holiday.

GILBERT CAMPBELL, M.B. Glasg.,
Partick.

We regret to announce the death of Mr. Gilbert Campbell, which occurred at Bishopton on 13th September. Mr. Campbell, who was a native of Ayrshire, was for many years a prominent medical practitioner in Partick. He began life as a teacher, his first post being at Home, in Berwickshire, and afterwards he was assistant master at Allan Glen's School. He studied at Anderson's College, Glasgow, amongst his teachers being Professor George Buchanan and Sir Thomas M'Call Anderson, and he took, in 1873, the qualifications of the Royal College of Physicians of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow. Five years later, having completed a qualifying course at Glasgow University, he took the degree of M.B., and afterwards began practice in Bridgeton. At a later date he removed to Partick, succeeding his late brother in his practice, and by his personal and professional qualifications making himself the centre of a wide circle of patients and friends. He was appointed parochial medical officer, and was for fourteen years chairman of the Scottish Poor-Law Medical Officers' Association, in which capacity he was responsible for much good work done amongst the medical officers of the Highlands and islands. It was, indeed, his characteristic that he gave himself freely in the service of others, and that, while not neglecting the scientific side of his profession—he was at one time assistant to the Professor of Physiology in Anderson's College, and proved himself a brilliant teacher—he captured the loyal devotion of his patients by the qualities not only of his mind but of his heart. He died aged about 74, leaving behind him a memory that will long be kept green in the hearts of those who knew him. He is survived by his wife and several daughters and sons, one of whom is Mr. James H. Campbell, M.B., Partick.

WILLIAM GRAHAM YOUNG, M.D. GLASG.

WE regret to announce the death of Dr. W. Graham Young, formerly a well-known practitioner in the East-End of Glasgow, who passed away on 28th August in the seventy-ninth year of his age. He was a graduate of the University of Glasgow, where he took the degree of M.D. in 1860. For the long period of thirty-seven years he held the post of casualty surgeon in the Eastern Police District, holding the appointment till his retirement, now a considerable number of years ago. The last years of his life were spent in Eaglesham and Largs.

CURRENT TOPICS.

THE GLASGOW MEDICAL SCHOOL.

We publish the following particulars of the medical curriculum in view of the near approach of the winter session, which opens on the 18th inst.:—

University of Glasgow.

The University grants four degrees in medicine. Of these, the M.B. and Ch.B. must be taken together.

The following outlines of the regulations for graduation are in accordance with the New Medical Ordinance, which came into operation on 1st October, 1911:—

Before commencing his medical studies, the student must pass the preliminary examination. This comprises (1) English, (2) Latin, (3) Mathematics, (4) An Additional Language, namely, Greek, French, German, Italian, or such other language as the Senatus may approve. In the case of a candidate whose native language is not English, certain modifications may be made in the preliminary examination.

The certificate of having passed the above examination must, along with satisfactory evidence of the applicant having attained the age of sixteen years, be transmitted to James Robertson, Esq., 54 George Square, Edinburgh, so that the intending student may be registered in the books of the General Medical Council. Certain other examinations, or a degree in Arts or in Science from a recognised University, are accepted as exempting from the preliminary examination.

The degrees of M.B. and Ch.B. will not be conferred unless the candidate has been registered in the books of the General Medical Council for at least five years previously. The academical year commences on the first day of October. In each year there is one medical session of not less than thirty teaching weeks. The session is divided into three terms, two of which are deemed the equivalent of a winter session and one the equivalent of a summer session. Two of the five years of medical study must be spent at the University. There are four professional examinations. Of these, the first comprises Botany, Zoology, Chemistry, and Physics. Candidates are admitted to examination in any of these subjects, after attendance on the prescribed course or courses, at times to be determined by the Senatus. Those who have passed the first professional examination may be admitted to the second (Anatomy and Physiology) after the end of the sixth term (*i.e.*, second year). The third examination (Materia Medica and Therapeutics and Pathology) may be taken after the end of the ninth term (*i.e.*, third year). The final examination is open to those who have passed the third examination and completed the fifteenth term (*i.e.*, fifth year). The examination comprises Medical Jurisprudence and Public Health, Medicine, Surgery, and Midwifery, and the Diseases peculiar to Women and to Infants. Every candidate for the final examination must submit a declaration, in his own handwriting, that he has completed his twenty-first year, or that he will have completed it on or before the day of his graduation. The final examination is, like the other three examinations, held twice yearly—at the close of the winter session and of the summer vacation.

Class fees vary; for the majority of classes the fee is £4, 4s.

Clinical courses are taken in the Western and Royal Infirmaries. Attendance on the classes of the physicians and surgeons in both institutions is recognised for purposes of graduation. In addition to clinical courses, the Professors of Medicine, Surgery, and Midwifery at the Royal Infirmary conduct courses of systematic lectures.

Women students are admitted to certain classes in the University buildings. The remainder of the classes are held in Queen Margaret College. The clinical classes are taken in the Royal Infirmary.

The higher degree of M.D. may be taken by anyone who holds the Bachelor's degrees in medicine and surgery, on his complying with certain conditions. These are: That he must be of the age of twenty-four years or upwards; that he produces a certificate of having been engaged subsequent to having received the degrees of M.B. and Ch.B. for at least one year in attendance in the medical wards of an hospital or in scientific work bearing directly on his profession, such as is conducted in the Research Laboratories of the University, or in the naval, military, colonial, or public health medical services, or for at least two years in practice other than practice restricted to surgery. The candidate must pass an examination in clinical medicine, and must submit a thesis, for the approval of the Faculty of Medicine, on any branch of knowledge comprised in the second, third, or fourth professional examination for M.B. and Ch.B., excepting subjects which are exclusively surgical. Similarly, the degree of Ch.M. may be obtained by examination in clinical surgery and the presentation of a thesis on a subject not exclusively medical.

Full particulars of courses, fees, dates of examination, &c., will be found in the *University Calendar* (Messrs. MacLehose & Sons), or may be obtained from Albert Morrison, Esq., Registrar, the University.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

(1) *Triple Qualification* (L.R.C.P.E., L.R.C.S.E., & L.R.F.P.S.G.).—In conjunction with the Royal Colleges of Physicians and Surgeons of Edinburgh, the Royal Faculty of Physicians and Surgeons, Glasgow, grants a licence to practise. This Triple Qualification admits to the *Medical Register*, and those possessing it are eligible for the public services. The course of study and the examinations are similar to those for the University degrees, but the class fees are in many cases lower than those payable in the University. Qualifying courses are held in The Anderson College of Medicine and in St. Mungo's College,* and particulars may be obtained from the respective Deans. Regulations for the triple qualification may be had from Walter Hirst, Esq., Secretary to the Royal Faculty of Physicians and Surgeons, 242 St. Vincent Street, Glasgow.

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* Many of these courses are recognised by the University as qualifying for graduation. For special regulations, see the respective *Calendars*.

(2) *Fellowship.*—This fellowship is open to registered practitioners of not less than 24 years of age, and of not less than two years' standing. The candidate must pass an examination in medicine or surgery, and in any one of the following subjects which he may select:—Anatomy, Physiology, Pathology, Midwifery, Diseases of Women, Medical Jurisprudence, Ophthalmic Surgery, Aural, Laryngeal and Nasal Surgery; Dental Surgery, State Medicine, Psychological Medicine, Dermatology.

Fee, £50; to one who is already a licentiate of the Faculty, £25. If the candidate does not desire to be eligible to hold office, the fees are £30 and £15 respectively.

EXTRA-MURAL SCHOOLS.

The Anderson College of Medicine.—This school is situated in Dumbarton Road, adjoining the main entrance gate to the Western Infirmary. The classes qualify for the M.B. and the Triple Qualification.

St. Mungo's College.—The school is in the grounds of the Royal Infirmary, Castle Street, and the students, as a rule, attend the clinics in the Infirmary. The classes are recognised by the University. They qualify also for the Triple Qualification.

Western Medical School (University Avenue).—The classes comprise courses upon Anatomy, Surgery, Medicine, Midwifery and Gynæcology, Ophthalmology, and Diseases of the Ear, Throat, and Nose. Some of these qualify for the M.B. and the Triple Qualification; others are conducted as tutorial classes. The students receive their clinical instruction in the Western Infirmary, Eye Infirmary, &c. Usual class fee, £2, 2s.; for the shorter courses, £1, 11s. 6d. or £1, 1s. Further information may be had from the Secretary.

CLINICS.

Royal Infirmary (St. Mungo's College adjoins), 660 beds.—Visit hour, 9 A.M. daily; Outdoor Department, 2 P.M. Fees:—1. For infirmary attendance, dispensary, &c.—(*a*) for perpetual ticket, £7; (*b*) for season tickets—six months, £2, 2s.; three months, £1, 1s. Separate payments for season tickets, amounting in all to £7, 7s., entitle a student to obtain a perpetual ticket in exchange therefor. 2. For clinical instruction—two terms, or six months, £3, 10s.; one term, or three months, £1, 15s. Students who have paid to any other hospital in the United Kingdom or elsewhere the fees necessary to obtain a perpetual ticket for such hospital shall be admitted as students of the Royal Infirmary on payment of a hospital entrance fee of £1, 1s. for attendance for six months and 10s. 6d. for attendance for three months, and where a class for clinical instruction is taken, he shall pay in addition the fees for such instruction as above stated. Vaccination, £1, 1s.; pathology, £4, 4s.; or for University graduation, £6, 6s; bacteriology, £2, 2s.; practical pharmacy, £1, 11s. 6d. Fees for the above, as well as for all medical classes connected with St. Mungo's College, are payable to the Superintendent of the Infirmary, Dr. J. Maxtone Thom.

Western Infirmary (adjoining the University), 580 beds.—Visit hour, 9 A.M. daily; Outdoor Department, 2 P.M. Every student shall pay a fee of £10, 10s. for hospital attendance, and, in addition, £3. 3s. for each winter session, and £2, 2s. for each summer session of clinical instruction. Students who have completed their clinical course elsewhere shall be permitted to enter for a six months' course of the *hospital only* on payment of a fee of £2, 2s. The fees should be paid to the Superintendent, Dr. D. J. Mackintosh, M.V.O.

Students who have obtained certificates of attendance during a course or courses of Clinical Medicine extending over not less than nine months, and who have also obtained certificates of attendance during a course or courses of Clinical Surgery extending over not less than nine months, may take courses of instruction on Clinical Medicine and Clinical Surgery on alternate days.

Students "remitted" from the final examination in both Medicine and Surgery can also adopt the alternate day system for their period of further study (which, in the case of candidates "remitted" at the Spring final examination, includes the full term of six months from May till October).

Victoria Infirmary (Langside), 180 beds.—For particulars apply to the Superintendent, Dr. D. Otto Macgregor.

Royal Hospital for Sick Children (Yorkhill), 206 cots.—Visiting physicians and surgeons attend 9.15 A.M. daily.

Dispensary or Out-patient Department. Over 12,000 cases treated annually. Physicians and surgeons attend 11.30 A.M.

Country Branch Hospital (Drumchapel, Dumbartonshire), 26 cots.

For the clinical instruction of students the year will be divided into three terms. A special course of lectures and clinical instruction on the medical and surgical diseases of children (meeting the requirements of the Medical Ordinance) will be given in each of said terms. The class will meet daily at 11 A.M., and will consist of 15 medical and 15 surgical meetings.

Students attending the hospital in their third year of clinical study will be given every opportunity of taking part in the regular clinical work in the wards under the supervision of the visiting physicians and surgeons.

Hospital fee (admitting to hospital and dispensary for purpose of clinical instruction, and attending said special course, &c.), for one term, £1, 1s.; or for whole year, £2, 2s.; fee for clinical instruction and said special course for one term, £1, 15s. Fees are payable to, and further information may be obtained from, the Medical Superintendent, The Hospital, Yorkhill.

Eye Infirmary (174 Berkeley Street, and 80 Charlotte Street).—Hour of visit, 1 P.M. daily. Fee for six months, £1, 1s.; for twelve months, £2, 2s.

Ophthalmic Institution (126 West Regent Street).—Hour of visit, 2 P.M. Fee for a qualifying course, £1, 1s.

Insanity.—During the summer session, a course of lectures is given in the University, and clinical instruction in the Royal Asylum, Gartnavel. Fee for combined course, £2, 2s.

Dr. Oswald conducts, in addition to the above, a clinic on Incipient Mental Disorders in the Out-patient Department of the Western Infirmary.

At Gartloch Asylum, Gartcosh, senior medical students may obtain appointments as resident clinical clerks. The appointments are for six months, and those holding them can attend classes in Glasgow in the earlier part of the day.

Applications should be sent to the Medical Superintendent, W. A. Parker, M.B., considerably in advance.

Clinical lectures are given at Hawkhead Asylum by Dr. James H. Macdonald, "Mackintosh" Lecturer on Psychological Medicine in St. Mungo's College. Systematic lectures are given at the College as part of the same course.

Fevers.—Clinical instruction is given in Belvidere and in Ruchill Hospital. Fee, for a course extending over ten weeks (once a week), £1, 1s. Apply to Mr. James D. Borthwick, 285 George Street, Glasgow.

Maternity Hospital.—Clinical instruction in Midwifery is given at the Hospital, and there are exceptional facilities for practical work in the Outdoor Department.

Gynæcology.—Clinical instruction is given in the Gynæcological Departments of the Western and Royal Infirmaries.

Diseases of the Skin, and of the Throat, Nose, and Ear are taught in the special departments of the Royal and Western Infirmaries. The *Hospital for Diseases of the Throat, Nose, and Ear* (Elmbank Crescent) affords further opportunities for the study of these diseases.

APPOINTMENTS.—The following appointments have recently been made:—

S. N. Galbraith, M.B., Ch.B.Glasg. (1907), D.P.H., to be Medical Officer of Health and School Medical Officer for the Borough of Newark-on-Trent.

A. Fairlie, M.D.Glasg. (M.B., 1889), to be Certifying Factory Surgeon for the Blyth District, co. Northumberland.

E. B. Jago, M.B., C.M.Glasg. (1896), to be District Medical Officer of the Rotherham Union.

H. G. Robinson, M.B., Ch.B.Glasg. (1909), to be Certifying Factory Surgeon for the Saltash District, co. Cornwall.

Royal Navy (4th September): Temporary Surgeon R. Lyon, M.B., Ch.B.Glasg. (1915), to *Canopus*, to date 3rd September.

7th September: Temporary Surgeons A. F. M'Intosh, M.B., Ch.B.Glasg. (1915), to *Temeraire;* J. D. Milligan, M.B., Ch.B. Glasg. (1915), to *Defence.*

10th September: Temporary Surgeon D. K. Adams, M.B., Ch.B.Glasg. (1913), to *Vivid* for disposal, to date 18th September.

13th September: Temporary Surgeon M. B. Macleod, M.B., Ch.B.Glasg. (1915), to *Hercules.*

15th September: Staff Surgeon C. Ross, M.D.Glasg. (M.B., (1905), to *Talbot,* to date 14th September.

Royal Army Medical Corps (17th August): Granted temporary rank as Major while serving with the 1st Birmingham War Hospital—W. J. Orr, M.B., C.M.Glasg. (1896), F.R.C.S.E.

19th August: To be temporary Lieutenants—S. H. Harris, M.B., Ch.B.Glasg. (1910); W. Martin, M.B., Ch.B.Glasg. (1914); R. S. Gibson, M.B., Ch.B.Glasg. (1915), B.Sc.; D. S. Campbell, M.B., Ch.B.Glasg. (1915); J. D. Watson, M.B., Ch.B.Glasg. (1915); J. M. Macfie, M.B., Ch.B.Glasg. (1915); J. K. Rennie, M.B., Ch.B. Glasg. (1915), B.Sc.; J. V. Grant, M.B., Ch.B.Glasg. (1907); A. Scott, M.B., Ch.B.Glasg. (1915); D. M'Farlane, M.B., Ch.B.Glasg. (1915); J. A. Leiper, M.B., Ch.B.Glasg. (1915); W. Cunningham, M.B., Ch.B.Glasg. (1915).

21st August: To be temporary Major—A. R. Ferguson, M.D. Glasg. (M.B., 1892).

23rd August: To be temporary Lieutenant—J. C. Knox, M.B., Ch.B.Glasg. (1915), B.Sc.

25th August: Lieutenant (on probation) J. G. Hendry, M.B., Ch.B.Glasg. (1913), is confirmed in his rank.

1st September: Colonel R. J. Geddes, D.S.O., M.B., C.M.Glasg. (1892), is retained on the active list, and to be supernumerary.

6th September: The undermentioned temporary Lieutenants to be temporary Captains—W. M. Howells, M.B., Ch.B.Glasg. (1913); H. B. Morgan, M.B., Ch.B.Glasg. (1909); T. L. Fraser, M.B., Ch.B.Glasg. (1911); W. Groome, M.B., C.M.Glasg. (1889); W. G. Goudie, M.B., Ch.B.Glasg. (1911); F. Murchie, M.B., Ch.B. Glasg. (1909); J. S. Stewart, M.B., Ch.B.Glasg. (1914); N. M'N. Rankin, M.B., Ch.B.Glasg. (1908); J. R. C. Greenlees, D.S.O., M.B.Cantab.; W. L. Scott, M.B., Ch.B. Glasg. (1911); F. J. Whitelaw, M.B., Ch.B.Glasg. (1912); T. Martin, M.B., Ch.B.Glasg. (1912); F. L. Napier, M.B., Ch.B.Glasg. (1909); J. L. Stewart, M.B., Ch.B.Glasg. (1905); D. W. Smith, M.B., C.M.Glasg. (1901); A. T. I. Macdonald, M.D.Glasg. (M.B., 1907); W. Dawson, M.B., Ch.B.Glasg. (1908).

7th September: To be temporary Major—Temporary Lieutenant R. C. Brown, M.D., whilst employed in charge of the Springburn and Woodside Hospital, Glasgow. The undermentioned temporary Lieutenants to be temporary Captains—W. L. Cassells, M.B., Ch.B.Glasg. (1913), B.Sc.; R. R. Archibald, M.B., Ch.B. Glasg. (1910); J. S. Buchanan, M.B., Ch.B. Glasg. (1912).

11th September: To be temporary Major—H. C. Marr, M.D. Glasg. (M.B., 1892). To be temporary Lieutenants—E. L. Marsh, M.B., C.M.Glasg. (1891), D.P.H.; M. M. M'Rae, M.B., Ch.B.Glasg. (1908); W. W. Galbraith, M.B., Ch.B.Glasg. (1914); J. P. Lusk, M.B., Ch.B.Glasg. (1902); J. A. Cowie, M.B., Ch.B. Glasg. (1904); W. Waddell, M.D.Glasg. (M.B., 1882); J. Walker, M.D.Glasg. (M.B., 1903); M. S. Bryce, M.B., Ch.B.Glasg. (1914); W. Forsyth, M.B., Ch.B.Glasg. (1913); C. C. B. Gilmour, M.B., Ch.B.Glasg. (1915); J. A. J. Conway, M.D.Glasg. (M.B., 1911); W. Cullen, M.D.Glasg. (M.B., 1884); T. S. Brodie, M.B., C.M. Glasg. (1893).

R.A.M.C., Territorial Force (13th September): Scottish General Hospital—Captain H. Walker, M.B.Ed. (Shawlands), from list of officers available on mobilisation, to be Major on the permanent personnel.

Scottish Command Orders (15th September): Major W. MacLennan, M.B., C.M.Glasg., R.A.M.C.(T.), and Captain C. C. Cuthbert, M.D.Glasg., R.A.M.C.(T.), having been posted as Visiting Medical Officers to Oakbank Hospital, Glasgow, as from 9th September, have taken over duty from that date accordingly.

War Honours for Glasgow Graduate.—In the list of honours conferred by the Emperor of Russia, published on 26th August, there appears the name of Lieutenant John Downie, R.A.M.C.(T.), who is one of the recipients of the Order of St. Anne, 4th Class, inscribed "For Valour in War." Lieutenant Downie, who is a son of Mr. Neil Downie, schoolmaster, Dougarie, Arran, holds a commission in the Yorkshire Mounted Brigade

Field Ambulance, and is a graduate in medicine of Glasgow University, where he took the degrees of M.B., Ch.B. in 1900. Before the war he was in practice in Wakefield.

GLASGOW MEDICAL CASUALTIES.—We have this month to record as among the wounded the names of two medical men formerly connected with Glasgow and its neighbourhood. Lieutenant-Colonel A. R. Wilson, M.D., R.A.M.C.(T.), who was reported wounded in the Dardanelles fighting in the casualty list published on 4th September, is a son of Mr. C. E. Wilson, LL.D., Senior Inspector of Schools for Scotland, and was born in Glasgow in 1870. He studied in Edinburgh, where he took the degrees of M.B., C.M., in 1895, and that of M.D. in 1901. After graduation he acted as house surgeon to the Glasgow Maternity and Women's Hospital, and thereafter held various appointments in Edinburgh. Until the outbreak of war he was in practice at Liscard, Cheshire, where he had a prominent position. He joined the Mediterranean Expeditionary Force with the 3rd Welsh Field Ambulance.

Lieutenant L. H. Skene, M.B., R.A.M.C., also reported wounded in the Dardanelles fighting in the casualty list published on 9th September, is, like Lieutenant-Colonel Wilson, a graduate of Edinburgh University, where he took the degrees of M.B., Ch.B. in 1911. Prior to joining the R.A.M.C., he held the post of assistant physician to the Lanark District Asylum, Hartwood. Lieutenant Skene is famous in the world of sport, having played as goalkeeper for many of the best known amateur clubs in Association football.

Two deaths in action have occurred among medical students of Glasgow University, while a third has been wounded. Lieutenant D. R. C. Cameron, killed in action in France on 13th September, was the elder son of Mr. Donald R. Cameron, L.D.S., and an old pupil of Glasgow Academy. He proceeded to the University for his medical studies, and was a member of the University Officers' Training Corps. At the outbreak of war, while a fourth year student, he received his commission as Second Lieutenant, and was gazetted Lieutenant while in France. His commanding officer, in a letter announcing his death, writes of him as a brave and fearless officer.

Lieutenant H. A. Munro, killed instantaneously in France on

22nd September as the result of a bomb explosion, was in the final year of his medical studies at the University before the outbreak of war, when he was gazetted to the 8th Argyll and Sutherland Highlanders. He was distinguished among the students of his year for his conspicuous abilities, and his death was the tragic outcome of his conspicuous courage. We could look for none but noble qualities in the son of Mr. Neil Munro.

Lieutenant Robert Cunningham, wounded in the fighting at Hooge, near Ypres, is a son of Mr. William Cunningham, of Whitehall, Easterhouse, and a medical student of Glasgow University. For two years he had been a member of the University Officers' Training Corps, and shortly after the outbreak of war he received his commission as Second Lieutenant in the Worcester Regiment. He was attached to the 1st Northumberland Fusiliers on going to the front, and it was with them that he received his wound, being buried under the parapet of a trench blown in by a German shell. He was promoted to the rank of Lieutenant on 16th July, 1915.

NEW SCHEME FOR R.A.M.C. COMMISSIONS.—As the result of a meeting which took place towards the end of August between the chairman and members of the executive committee of the British Hospitals Association and Sir Alfred Keogh, Director-General of the Army Medical Service, and at which attention was directed to the shortage of resident medical officers of hospitals, a new scheme for extending the arrangements under which honorary commissions in the R.A.M.C. are granted to the resident staffs of hospitals connected with medical schools has been approved. It has not been found practicable to extend the operation of the scheme to other hospitals. The following are the conditions under which resident medical officers may apply for these commissions:—

1. The scheme is only applicable to hospitals connected with recognised teaching schools (not post-graduate schools).

2. All candidates for commissions must be registered medical practitioners.

3. They must be physically fit for general service.

4. They shall be called upon to take general service with the R.A.M.C. after three months' residence, and shall be liable to be

called up for service before the expiration of that period if required on forty-eight hours' notice.

5. So far as practicable, not more than one-third of the number of residents will be called up on forty-eight hours' notice at one time.

6. Each candidate shall, on being approved for a temporary honorary commission, receive a grant of £20 as an allowance for the purchase of uniform. This is part of the grant of £30 issuable on taking general service.

7. No undertaking can be entered into that any residents called up for service will be replaced by the War Office.

8. Applications for temporary commissions should be made to the War Office by the hospital authorities concerned, who will vouch for the candidates whose names they submit.

9. The authorities of any hospital who wish to avail themselves of this scheme should inform the War Office of the number of beds maintained in the institution, and the number of residents employed.

DOCTORS ON WAR SERVICE.—An appeal to the public calling for sympathy and assistance in setting free medical practitioners for service with the forces has recently been issued by the Medical War Service Emergency Committees, 429 Strand, London. It is couched in the following terms:—

"The shortage of commissioned medical officers is a serious matter for our Armies, and this shortage can only be made good by releasing medical practitioners from civil life. These men are dependent on their practices for their livelihood. At the call of duty they go to assist in saving the lives and relieving the suffering of their countrymen, and in so doing they risk not only death and injury, but also their means of livelihood on their return. While recognising the right of every person to consult any doctor he chooses, we appeal to all British citizens not to give up their usual medical attendant on account of his temporary absence on military duty, and to insured persons we appeal not to apply for transfer. In all cases it should be regarded as an obligation and patriotic duty to safeguard in every possible manner the interests of the doctors who volunteer for active service. Every medical man who leaves his practice has either appointed a *locum tenens* to carry on his work, or has arranged with neighbouring practitioners to attend to his patients while he is away. We hope that patients will inform the practitioner they may consult that their own doctor is absent on military service, and that they intend to place themselves again under his care whenever the need arises after his return. The medical men who remain are willingly attending the patients of those on service, on the distinct understanding that they shall not be asked to continue to do so after the war. The public will assist these men only to fulfil this honourable understanding if it will observe the lines of conduct we have indicated."

Among the signatories are Sir William Osler (Oxford University), Professor Clifford Albutt (Cambridge University), Dr. Frederick Taylor (President of the Royal College of Physicians), Sir Rickman Godlee, Dr. Harvey Littlejohn (Dean of the Faculty of Medicine, University of Edinburgh), Dr. Alex. Ogston (President of the British Medical Association), and the leading physicians and surgeons of England, Scotland, and Wales.

Ambulance Train for France.—An ambulance train, which was recently constructed at the Caledonian Railway Company's works at St. Rollox to the order of the War Office, was open for the inspection of the public at the Central Station, Glasgow, from 2nd to 5th September. It is designed for the use of British soldiers on the lines of communication in France, and in its perfect arrangements illustrates the latest principles of ambulance construction. The train is 300 yards long, weighs 442 tons, and has accommodation for 454 patients and 44 officials. It is made up of 16 corridor carriages, and there is clear passage from end to end. The 16 carriages include wards for lying-down patients and sitting-up patients and an infectious ward, in addition to accommodation for the staff, a pharmacy, kitchens and stores. Hygienically it is a triumph of design. By an ingenious system of fans a constant supply of fresh air is supplied, and there is ample light, while the furnishings are admirable in quality and taste. Exceptional care has properly been bestowed on the wards where the wounded and sick will be accommodated. There are four ward cars for lying-down patients, each accommodating 36 men in cots which are arranged lengthwise in three tiers at either side. The cots can be folded against the sides to facilitate cleaning, or to permit the lower berths being used as seats. Five wards are allotted for patients able to sit up, and three of the wards are provided with saloon compartments, the remaining two having side corridors and ordinary compartments affording seating accommodation for 292 patients. Four of the cars are upholstered in hygienic blue leather cloth, the other one having sycamore seats and backs, thus minimising the risk of infection. On each door are small hand-rails, an aid to feeble men to ascend to the cars, while to facilitate loading the cars are provided at both sides with double-width doors for the easy admission of stretchers, and when necessary a patient may be deposited in his cot without withdrawing the stretcher. The requirements of the staff have been met in similarly adequate manner. There are three state-rooms for the medical officers and two state-rooms for the nurses, in each of which are two folding beds, a seat, and folding table.

The train, which is a fully-equipped hospital on wheels, is designed for the care and treatment of the seriously injured, as well as for the convalescent. There is a spacious operating theatre, and a pharmacy car provided with ample accommodation for medicinal, surgical, and nursing appliances. The pharmacy car is of sufficient width to admit on stretchers patients requiring special attention on the journey. The personnel car consists of seven apartments, giving accommodation for 28 orderlies, and the rearmost car will be used as the infection ward, having two separate compartments with 18 folding cots. The artificial lighting is entirely by electricity, but special candle brackets are fitted throughout the train for use in cases of emergency. The interior is white enamel and the exterior khaki, with a red cross in the centre of each coach. The floors are covered with thick inlaid linoleum, and here and there on the walls are pictures of scenes of the homeland. The mechanical equipment is thoroughly up to date, the springs are of the most approved type, and the brake installation is of the Westinghouse automatic air type, while the coupling appliances are suitable for the French locomotives which will drive the train.

At the formal opening of the train for public inspection, the ceremony was performed by the Duchess of Montrose, who first inspected the guard of honour furnished by men of the Royal Army Medical Corps about to proceed to the Dardanelles. Sir Charles Bine Renshaw, who presided over a distinguished company, said that they did not regard that train as merely a Caledonian train but as an ambulance train contributed by the Scottish railways towards ambulance work on the other side of the water. He hoped that in all details the train would meet with the approval of those who inspected it. When they looked back upon the history of such wars as the Peninsular, the Crimea, and the Mutiny, and thought of the terrible sufferings endured by the troops, they realised what an enormous advance had been made in the methods adopted for helping the wounded. No doubt in these modern days the horrors of war had been enormously accentuated. We had aerial warfare, submarine warfare, and weapons of precision which were unknown in the earlier days to which we had referred. Perhaps the most extraordinary of all the changes were these weapons of precision and of great force which could send projectiles distances of 10 and 20 miles. The means of dealing death had been increased, but while the forces which made for injury had been enormously developed, he was thankful to think that the surgical and medical possibilities of the present day were enormously greater than they were in previous times. We had now first aid on the fields of battle, a swift motor service to and from the field hospitals, and splendid ambulance trains, such as that on view, going from the field hospital to the base hospitals. All these agencies were helped by the devoted labours of the medical profession, the value of whose efforts during the present war it would be impossible to exaggerate. The whole Empire owed them a great debt of gratitude. Amongst other things we had to acknowledge the splendid manner in which the women of the country had responded to the appeals made to them, and the devoted service they had given to the Red Cross and other institutions. On behalf of the directors and shareholders of the Caledonian Railway, Sir Charles said they were proud to have the opportunity of devoting whatever money was received from the charge for admission to the train to the Red Cross organisation, which had done splendid work. He hoped that a substantial sum would be realised, as the train would afterwards be exhibited in other cities. Sir Charles then invited the Duchess of Montrose to inspect the train.

The Duchess of Montrose said that that was not quite the place for making a speech, but she would like to say she was sure they had before them a veritable train *de luxe* for the wounded, and every comfort that could possibly be thought of beforehand had been thought of in that train. They rejoiced greatly with Sir Charles Bine Renshaw that that beautiful train would save our poor brave wounded soldiers so much suffering when they were removed to the hospitals. It was very kind and thoughtful of the chairman and directors of the Caledonian Railway to give them that opportunity of inspecting the train, for many of those present had relations serving in this terrible war, and it would be a great comfort to them to see what could be done to save them suffering.

The Duchess of Montrose, accompanied by Sir Charles Bine Renshaw and other ladies and gentlemen, afterwards inspected the train, and as soon as the guests had also had an opportunity of walking through it the public were admitted.

A charge of one shilling was made for admission to the train, and so great was the public eagerness to view it that in the course of the four days during which it was open for inspection a sum of over £2,000 was collected for the benefit of the Red Cross. A very substantial addition to the Red Cross funds has since followed the exhibition of the train in other cities.

DUNOON CONVALESCENT HOMES.—The forty-sixth annual meeting of the subscribers to the Glasgow and West of Scotland Convalescent Seaside Homes, Dunoon, was held on 7th September, in the Religious Institution Rooms, Glasgow, Sir John Ure Primrose presiding.

In the annual report it was stated that the ordinary income for the financial year ending 31st July amounted to £8,570 and the ordinary expenditure to £7,193, 16s. 7d. This was an increase on last year's income, but it was owing to payments made by the War Office and the Argyll Territorial Association for the use of the institution when mobilising and for the billeting of troops. Otherwise the income would have been less than in the former year, as there was a considerable decrease in subscriptions from individuals, works, and churches. There was a decrease in numbers admitted, which was owing to the war and the abnormal conditions prevailing in consequence. In August, 1914, the whole buildings and grounds of the Homes were commandeered by the military authorities for the mobilisation of a Territorial battalion of the Argyll and Sutherland Highlanders. During the succeeding winter and spring a portion of another battalion of the same regiment was billeted in part of the Homes. A large number of British and Belgian convalescent wounded soldiers had recuperated in the Homes (100 beds being placed by the directors at the disposal of the Scottish Branch of the British Red Cross Society), and many were still resident.

The chairman said that one refreshing aspect among all the strife of war was that we in Britain had preserved the doctrine of Christian help and Christian fellowship for those who needed succour and help. In the numberless institutions seeking to aid humanity we had an organism so perfect that even after a year of fierce struggle they carried on their beneficent work, some with little financial difficulty, others, like the Homes, with a measure of financial success they hardly expected.

Mr. Alexander Wylie, who moved the adoption of the report, said that the Home had twice been commandeered for military purposes, and twice the directors had received payment. If it had been a German institution they would not have received a penny.

Sir Thomas Mason seconded, and Sir Archibald Campbell supported the adoption of the report, which was agreed to.

Lord Inverclyde, who proposed a vote of thanks to donors and subscribers to the fund, said he was sorry that the subscriptions were not keeping up in the way one would hope. Of course one realised that the cost of maintenance of an institution such as the Homes at the present time was much heavier than in ordinary circumstances. Such large weekly wages were being earned at present, and the Home was such a benefit to working men, that he hoped they might see their way fully to support the funds of the institution in the future.

The Rev. John MacGilchrist seconded.

Sir John Wilson, who spoke in support of the resolution, said he thought it was the duty of the workmen who remained at home to endeavour, as far as possible, to make up the deficiency caused by their comrades having gone to fight their battles at the front.

The resolution was adopted.

Votes of thanks were accorded to the board of management, the auditors, and the chairman.

SCOTTISH SANITARY CONGRESS.–The forty-first annual congress of the Incorporated Sanitary Association of Scotland was held in Glasgow on 2nd and 3rd September, under the presidency of Mr. Robert Lambie, Lanark County Council. As is the custom of the congress, a popular lecture was delivered on the evening preceding its first sitting, the subject on this occasion being "The House-fly in Relation to Disease," and the lecturer Dr. R. M. Buchanan, bacteriologist to the Corporation of Glasgow. The lecture, which was largely attended, was delivered in the Masonic Hall, West Regent Street, and will appear in a subsequent issue of the *Journal.*

At the annual general meeting of the Association, which was held prior to the lecture, Mr. Robert Lambie, convener of the Public Health Committee of Lanark County Council, was elected president; Dr. Alexander Robb, county medical officer for Midlothian, Linlithgow, and Peebles, and Mr. F. G. Holmes, C.E., vice-presidents; and Dr. Robb was nominated president-elect.

Mr. Duncan Campbell, county sanitary inspector, Renfrewshire, proposed the following resolution:—"That this annual general meeting of the Incorporated Sanitary Association of Scotland remits to the Council of the Association to consider the question of present conditions attaching to the appointment by local authorities of sanitary inspectors, and to take such steps as they may deem advisable with the object of securing that no unqualified person be appointed to the office of sanitary inspector." He said that for some time there had been complaints as to several appointments. The time had come, he thought, when the certificate of that Association, or of some similar body, should be of some importance when appointments fell to be made. In the North of Scotland particularly they had complaints that men without certificates and without real experience had been appointed sanitary inspectors.

The resolution was unanimously adopted.

Mr. Archibald Craig, Glasgow, spoke in support of a resolution by the Glasgow Council of the National Registration of Plumbers, approving of the movement for the training, examination, and national registration of plumbers. He said the movement was purely educational, and had nothing to do with questions between masters and men.

The resolution was unanimously adopted.

The first sitting of the congress, on 2nd September, was opened by the presidential address of Mr. Robert Lambie, who took as his subject "Twenty-five years of Local Government." He said that the charter of 1889 opened the way to a more progressive and comprehensive policy of local government, and he thought it might fairly be claimed that the machinery which it set up had proved wonderfully successful. In the public health services a new era was inaugurated. Medical and sanitary officers found a place in the local affairs which they had never formerly occupied. Water supply, drainage, hospital provision received a fillip which had formerly been lacking, and the new authority created by the Act speedily set up a working organisation whose effects were evidenced by the advanced position which county government occupied to-day. The same held good with regard to the burghs. Perhaps the difference here was not so marked as had been the case in the counties. Certainly their powers were more extensive than those available in the counties twenty-five years ago, but the progress made in every department of the burghs had also been phenomenal. Water supplies, drainage schemes, improved housing, lighting, scavenging, public libraries, and the like had all come on apace. Taking Scotland altogether, they found that the average death-rate twenty-five years ago was 19 per 1,000, while the average for the past few years had only been 15 per 1,000. Infantile mortality in Scotland had been reduced over the same period from 121·3 to 105·5 per 1,000 births. Deaths from phthisis had been reduced from 1·76 to 1·12 per 1,000. And what of the comfort and convenience which had been added to the every-day life of the community? We had decent roads and footpaths to walk on, pure and sufficient water supplies, the foul and unsightly ditches and ashpits were in great measure things of the past, our food and milk supplies were strictly supervised and controlled. These things, of course, had cost money. We could not complain on that score, but it was right and proper that we should inquire whether we had got fair value for what we had spent. Speaking broadly, the improvements which the past quarter of a century had witnessed had been brought about without extravagance.

They all knew of the many inequalities and anomalies which had grown up in connection with their rating system, both in counties and in burghs. If the argument was to be admitted that payment of rates was to be based according to the service or extent of service rendered, then there would be nothing but chaos. Again, on the question of the grants made by the Government towards certain public health services, he thought they had a grievance. They found the Government recognising some of the less important services and altogether neglecting the larger and general public health work. Public health work was a national and a local service, and greater recognition should assuredly be given from Imperial sources. And why should one community which was unfortunate enough to have a low valuation be assessed at a very high figure to maintain a proper public health standard, while another community with a high valuation was able to carry through its work at a low rate? It was all to the nation's interest to have healthy citizens throughout the kingdom, and the Legislature should not permit a system which was capable of allowing a local authority to neglect in any way its public health and sanitary duties because of the fear of high rating. His plea was for a broader basis of rating all round, with an adequate recognition from the Imperial funds. Notwithstanding the great advance made during these past twenty-five years, it was evident that great work still lay before them. A good basis, however, had been laid by the experience of the past twenty-five years. The foundation of local government in Scotland, he was convinced, was secure, and might be built on with complete confidence in the days to come.

Dr. A. Campbell Munro, county medical officer, Renfrewshire, read a paper on "The Care of the Health of the Child." The termination of the war, he said, would be a critical point in the history of the nation. At that time the economic position would be grave, the national resources would be exhausted, there would be a lamentable burden of crippled manhood, and our chief fluid assets would be the manhood and womanhood of the nation. It was to be hoped that the diminishing birth-rate of recent years, which had been one of the most disconcerting factors in the lowering of our power as a nation relative to that of the Germanic powers, would have given place to a compensatory increase when it came to repairing our loss through the wastage of war of an immense mass of our most virile manhood. But however that might be, it was all important that we should take every step in our power to secure and safeguard the health of the children who were born. The first element in a scheme of child welfare was the appointment of an official health visitor or visitors. There was no such official known to the law—to obtain a place in the official list she must be styled a sanitary inspector. The scheme of maternity benefit under the National Insurance Act stood in need of revision. It was not properly utilised. The money should be payable only on the certificate of the medical adviser to the Insurance Committee that the mother had received proper attention in connection with her confinement. The period between infancy and school age was one of critical importance. It was in that period that measles and whooping-cough took their principal toll of life. Of those who survived an attack many succumbed to the sequelæ of those diseases, and many others died later in life of various forms of tuberculosis engendered on a soil prepared by the prior attack of one or other of those diseases. For the most part local authorities were doing nothing to stay that waste of life and health. It was obvious that nothing effective could be done without knowledge of the existence and whereabouts of the cases which occurred, and that could only be obtained under a system of compulsory notification. The speaker referred to the disadvantages of the present system of divided jurisdiction in regard to the health of children of school age, and suggested that the medical inspection and treatment of school children was a branch of public health administration, and should be carried out by the public health local authority.

Dr. A. J. Hall, medical officer of health, Rothesay, said the healthy child would be more valuable to the nation after the war, but he would be much more costly to rear because of the increased cost of living. If they were to avoid a declining birth-rate they would have to offer a premium on parentage. The principle had already been introduced in the income-tax abatement offered for each child under a certain age. Another method of lightening the burden of parenthood after the war would be to extend the system of national insurance in the direction of the State bearing a part at least of the cost of medical attendance on children up to the wage-earning period. They must make sure that nothing was done to lessen the sense of responsibility in the parent. If the State was to assist parents in raising children, the State must see that parents did justice to the children. Drunkenness and child neglect must be considered much more seriously, and receive adequate punishment, probably in the shape of imprisonment with hard labour.

Dr. Campbell Munro proposed formally that measles and whooping-cough be made compulsorily notifiable.

Mr. Henry M'Combie, Aberdeenshire, seconded.

Mr. Hamilton, Bellshill, moved the previous question. He said that compulsory notification was becoming a nuisance to the public. He was beginning to feel that medical men were insisting on so much notification that it was almost impossible to live without breaking some regulation. He thought they were ignoring the common sense of the people to far too great an extent by making everything compulsory.

Police-Judge Cameron, Dunoon, seconded.

On a show of hands the amendment was carried by a large majority.

On the motion of Dr. Campbell Munro, the congress unanimously adopted a resolution expressing the opinion that it was important that the Midwives (Scotland) Bill should be passed into law without further delay.

Mr. John Frew, county sanitary inspector, Linlithgowshire, read a paper on "Essentials of a Pure Milk Supply, and Suggestions for Regulations under the new Act." He said that he was convinced that if they had reached that stage when nothing but absolutely pure milk was dispensed to the people, at least three-fourths of the troubles amongst children would be at an end. Dealing with the essentials necessary for a pure milk supply, he said that some of the most regrettable outbreaks of infectious disease had been due to unrecognised or concealed cases in connection with dairies, so that it was essential and most important that all engaged in the handling of milk should be physically healthy. Personally, he would have liked the new Act better if it had provided for the periodical inspection of the milkers as well as the cattle. He did not wish to make the production of milk more costly, and was quite aware that every restriction would naturally raise the price to the consumer, and make its use less general to the poor whose children needed it so much. Still, he was convinced that with the yearly licensing of the premises which the new Act gave, and regulations framed on sensible, common-sense lines, much good would result, and the yearly licensing would give the power to root out of the business those who were not capable of conducting it.

On the suggestion of the secretary, Mr. George Middleton, writer, Glasgow, the congress remitted to the Council to take what steps might be expedient to secure uniformity in the regulations for the administration of the new Dairies Act.

The second sitting of the congress, on 3rd September, was opened by a paper by Mr. W. Ross Young on "Sanitary Provisions being inserted in Scottish Town-planning Schemes," on which an interesting discussion followed. Mr. John Weeks then read a communication on sanitary fittings in working-class houses, which was succeeded by the principal contribution of the day—the paper of Dr. A. K. Chalmers on "Economy of Food during War."

The lecturer said that the importance of economy in food under present circumstances was due to the fact that food formed a very considerable item in our national expenditure, and to the urgent need for restricting expenditure in all directions save one. Economy in food had two sides—it might mean better selection in what we bought, or better use of what we had. The poor frequently erred in the first direction, the wealthy just as frequently in the second, and there was waste in both. He proposed asking whether and how this could be avoided, and whether they agreed as to the answer was of less importance than that they should realise how important to the national finance and well-being economy in food might become. It was well to remember that the first indication that certain sources of food were not inexhaustible came during a time of peace and great prosperity. It was indicated that even without war we should in all likelihood have been compelled to consider what revision of our sources of food supply was necessary to avert shortage, and that continued shortage in the nitrogenous elements of food ultimately meant starvation. Within limits the other principal elements of food—the fats, starches, and sugars—might replace each other in nutrition, but none of these could, for chemical reasons, produce or replace the nitrogenous. Under peace conditions we pay, it was stated, something like 300 millions sterling annually as the price of food imported from abroad. Whether we had been wise in preferring this lavish expenditure to the neglect of home sources of food supply was a question for the economist. At the moment it would be more useful to consider whether we are making the best of what we have. In dealing with physiological economy in nutrition, Dr. Chalmers pointed out that one end of the scale of nutrition was controlled by the power of the body to digest, assimilate, or convert into its own structure the nutritive material which it obtained from food; the other by its power of disposing of the waste material which every form of bodily energy produces. Between them lay the whole field of metabolism; the building up of the body from the food elements and the breaking down in heat and other forms of energy, and on the balancing of these two healthy living depended. If the supply of food for building up was restricted, stunted growth resulted or energy failed; if it was continuously in excess of what was required for physiological need, disease resulted, and the high tension arteries which figured so largely in modern diseases were probably more often the result of persistent eating to excess, combined with sedentary habits, than of business worries. In peace times the amount of food in which a man might indulge was limited only by his dietary taste and his ability to purchase.

In a time of famine or siege one would be rationed, and the only possible standard of supply would be the physiological requirements of the system—so much nitrogenous food, starchy food or cereals, and so much fat. The difference between the siege ration and unregulated indulgence in food represented something which included one form of waste which might be called physiological, because it implied the consumption of food much in excess of the amount necessary. Another form of waste, equally preventable, was wholly economic. It prevailed in the household, the hotel, the restaurant, and the club. It was largely a woman's question. It was the waste of surplus food; the failure to take out of the last ounce all the energy it contained. Bread was probably the outstanding illustration. A third form of waste at the present time was the waste of fashion in food. Salmon, turbot and eel, herring, mackerel, and mullet are rich in fat as well as proteid. Cod and haddock, although poor in fat, had almost as much proteid as halibut, which cost about twice the price of cod. The calorie value per lb. of herring and mackerel was equal to about two-thirds that of salmon, while the absence of fat in cod and haddock might easily be corrected by the addition of butter or margarine in sauce. Let them remember the conditions of the struggle. We were told that this was a war of exhaustion—exhaustion of resources. It had been stated recently that half the national income was being spent thereon. What was unnecessarily spent on food was lost to munitions. In connection with a standard dietary, the fault was not in the standard but in the use made of it. Monotony in diet was fatal to the enjoyment of it. There must be variety, and dietary scales usually failed in this. Weight, age, sex, exposure, work, all had part in the construction of a standard diet, but when this was ascertained and its weight multiplied into the number of persons to be fed, waste in one or other constituent invariably resulted. The wastage in bread and butcher meat which they heard so much of at present resulted from this. Having shown the quantity of the principal constituents of food consumed by men during an average amount of labour, Dr. Chalmers said that every inquiry into the dietary of the poor disclosed a tendency to excess of carbohydrates. During the period of growth and convalescence from illness the proportion of nitrogenous food should be somewhat greater; in old age, less. Illustrating the nutritive values of articles of daily use—calculated as calories, or heat units, per lb. weight—he showed that meat (uncooked) gave 519 and cost 1s. 7d.; bread, 1,122, 2d.; cheese, 1,626, 10d.; potatoes, 459, ½d.; herring (3), 661, 1s. per dozen; 1 egg, 78, 1s. 6d. per dozen; butter (1 oz.), 236, 1s. 7d. per lb.; margarine, 236, 4d.; oatmeal, 1,703, 2½d.; barley meal, 1,640, 2¼d.; and lentils, 1,601, 4d.

Carbohydrates (the starches and sugars) cost little, and the fat of margarine had the same dietetic value as that of butter and cost one-third of the price at present. Oatmeal was rich in fat as well as proteid; three good herring had more fat than 1 lb. of lean butcher meat and cost about one-sixth of the price. The problem of economic dietary was the selection of the source of the nitrogenous elements. One pound weight of lentils, costing about 4d., would yield more proteid than 1 lb. weight of butcher meat at 1s. 5d., and in addition almost one-half of the daily caloric value required from the carbohydrates. They were deficient in fat, however. He submitted that a sudden and violent alteration in food customs was neither necessary nor desirable. More important was the need for reducing the wastage in surplus food which took place among all classes. The dietary of the poor usually lacked a proper proportion of proteids, fats, and vegetables, and had an excess of starches. Hutchison said that the cheapest sources of proteids or tissue builders were skim milk, fish, cheese, and the pulses, when they could be digested, while margarine and dripping were the cheapest sources of energy. Something might be urged in favour of a more frequent use of the substantial soups. Scotch broth or vegetable soup with bread, lentil soup, barley soup, potato soup, tomato soup, thickened with flour or sago, were all nourishing. Cheese was another nutritious form of dietary. Probably no food was more wasted than bread. Most households purchased too much at a time, and one could not always live on bread pudding. Bread should at be least one day old when used. Syrup or treacle might reasonably replace butter. Potted meat had unfortunately gone out of fashion. It was rich in nitrogen and very nutritious. Economy in dietary was very much an appeal to the individual, who must answer for himself whether in time of national emergency he was not using in a wasteful way resources which should be applied to other ends. Individuals, however, were grouped in households, and it was the mother of the household who could decide what fraction of the 300 millions we pay annually to foreign producers of imported foodstuffs could be retained in the country by a better use of home products. When mistress and maids alike were inspired by the conviction that they were as truly helping the national cause by preventing waste as in making shells a good deal would be accomplished. A similar duty was laid upon the hotel and restaurant manager and the directors of public institutions; but the hotels and restaurants would find both an impulse and encouragement to avoid waste if the movement began by their patrons accepting simpler food and less ample choice than was demanded by what were called the pleasures of the table.

In regard to the movement for economy in food, they must first of all have a clear conception of what they wanted to be at. He would like to pay a tribute to the work done by the School Board of Glasgow in its efforts to teach cooking; but they must admit that the teaching of cookery did not end, as they hoped it would, in the housewife practising her cooking after she had been taught. He was quite sure that many of the wives in the poorer houses of Glasgow forgot everything they were ever taught. He did not know whether the fault was with the teaching or the taught, but the fact existed that we as a people were as bad cookers as could be got. We must cook food properly, and we must be taught how to do it. How to spread the knowledge of cookery was a question for discussion —whether it could be better done in a missionary spirit or by gathering the housewives together in classes. If they were to make a proper use of nitrogen available in vegetable foods they must extend the system of cookery and alter it a good deal.

Dr. John T. Wilson, county medical officer of Lanarkshire, Hamilton; Dr. G. Clark Trotter, medical officer of health, Paisley; and Miss Melvin, superintendent, Glasgow and West of Scotland College of Domestic Science, in the discussion which followed, emphasised the necessity of proper cooking and the requirement of knowledge of economic dietary.

Other papers of importance were those by Mr. Peter Fyfe, chief sanitary inspector, Glasgow, on the effects of war on the duties and responsibilities of local authorities in Scotland; and Dr. W. F. Brown, medical officer of health, Ayr, on the training of nurses in local authority and poor-law hospitals, and their relation to the general supply of nurses.

The customary votes of thanks terminated the proceedings of a very successful congress.

REVIEWS.

A Text-Book on Medical Jurisprudence and Toxicology. By JOHN GLAISTER, M.D., D.P.H.Camb., F.R.S.E. Third Edition. Edinburgh: E. & S. Livingstone. 1915.

THIS is the second separate edition of Professor Glaister's well-known work on *Medical Jurisprudence and Toxicology,* which was at first published in one volume along with material bearing on public health.

The latest edition bears evidence of careful revision, and has been brought quite up to date by the inclusion of full accounts of recent criminal cases. It is therefore unique among such works, and indispensable to all engaged in medico-legal work. In addition to the large number of illustrations in black and white present in previous issues there has been added a very fine plate showing the various blood spectra drawn to scale and headed by the solar spectrum in colours. Another addition is a chapter on the constitution and powers of the General Medical Council, which will prove most useful in view of the increasing surveillance exercised by that body over practitioners working under the National Insurance Act.

In view of further issues of this standard work, we would suggest to Professor Glaister that with his unrivalled experience the time has now come for him to write more of the work in the didactic form. At present he frequently gives the views of various, more or less, ancient authorities and then adds his own. We think it would be more suitable for the student and practitioner of medicine if he would give his version, and only add such of the older opinions as are still worthy of mention. Some of the latter will always be valuable, but from the great changes in medical knowledge many of them have been rendered obsolete. An *ex cathedra* modern pronouncement on all the leading points of the subject is required, and no one is more fitted for the task than Professor Glaister.

A Text-Book of Forensic Medicine and Toxicology. By R. J. M. BUCHANAN, M.D. Eighth Edition. Edinburgh: E. & S. Livingstone. 1915.

THIS is the eighth edition of Husband's *Forensic Medicine* from which the public health matter has been separated, and the whole subjected to revision and addition by a new editor. The volume gives a good account of the subjects of medical jurisprudence and toxicology covering the ground in a systematic manner. The chapter on *post-mortem* examinations and exhumations is specially full, and is illustrated by a plate showing the ossification centre of the lower end of the femur in a full-time fœtus. There are also photomicrographs of various fibres and blood corpuscles. The section on toxicology is also well illustrated by photomicrographs, which are supplied by Dr. Buchanan, of poisons in the crystalline and other forms. This text-book takes an intermediate place between the small handbooks for the student and the large volumes of Glaister and Taylor, and as such will be found of great service to the practitioner or student who wishes more or less detail than is given in these.

The Intensive Treatment of Syphilis and Locomotor Ataxia by Aachen Methods. By REGINALD HAYES, M.R.C.S. London: Baillière, Tindall & Cox. 1914.

THIS little volume, while not neglecting the merits of salvarsan, is a plea for those of mercurial inunction properly applied. It is interesting to watch the fluctuations of professional opinion in regard to a new drug—how it is heralded as a specific, attacked as a poison, attains a position of distinct though limited usefulness, and finally sinks in many instances to the status of adjuvant to the older remedy which it had seemed about to supplant. Some such fate, it might almost appear, is in process of befalling salvarsan. Its strongest advocates now admit that the best results are obtained from its use in combination with mercury; its toxic effects have in some instances been manifested even in non-syphilitic cases, so that its use is admittedly not unattended with danger, slight though the danger may be in the majority of instances; and it is precisely in the most threatening cases of nervous syphilis, where everything depends upon rapidity of action, that it has proved most disappointing. Its discovery has undoubtedly enlarged the therapy of syphilis; but it bade fair at one time to make us forget the potent and less dangerous remedy which lay at our hands. Mr. Hayes's book will do good service by recalling to our minds the great value of the inunction method, and by indicating that many of the objections alleged against it apply only to its inexpert use.

Medical Applied Anatomy for Students and Practitioners. By T. B. JOHNSTON, M.B., Ch.B. London: A. & C. Black. 1915.

THIS book gives a concise account of applied anatomy from the standpoint of the physician. In such a work much space is necessarily given to a consideration of the anatomy of the nervous system, and in this instance half the book is occupied with this and with the anatomy of the organs of special sense. While this is so, the rest of the book is thorough enough in its account of the applied anatomy of the thorax and abdomen. One would, however, have been pleased to see some consideration of joints included, since, after all, their diseases are not exclusively surgical, and since the diagnosis of joint affections not infrequently involves anatomical considerations often of a complex nature.

In a book of this size (421 pages) it is quite impossible to give an exhaustive account of every organ, but surely a somewhat more detailed account of the apical relations of the lungs might have been given. Even without extension of the space devoted to the respiratory system, an adjustment of various paragraphs more in keeping with the importance of the subject-matter would have prevented the omission of some really important points. Thus, while a good deal of space has been devoted to "Lombardi's varicose zone of alarm," there is little that seems inspired by Dickey's recent work; and the reviewer can find no mention of certain relations between the "percussion" apex and the anatomical apex, first investigated, he believes, by Krönig. The circulatory system is dealt with in a satisfactory manner, although here, also, more careful consideration of space and matter might effect improvement. Some of the physiological explanations are a little doubtful, as, for example, the account of the ventricular venous pulse.

There is, however, much useful information contained in the book; it is well if not excessively illustrated, and, so far as it goes, very sound in view. The author never loses sight of his purpose, and constantly correlates physiological applications with anatomical, and applies them both to diseased conditions. The book, then, can be recommended to anyone who wishes a concise account of medical applied anatomy.

The Transactions of the Edinburgh Obstetrical Society. Vol. XXXIX. Edinburgh: Oliver & Boyd. 1914.

THE papers included in this volume of *Transactions* are of much interest, and several of them will appeal specially to those who are engaged in investigating the problems of obstetric science.

There is a valuable communication by Dr. R. W. Johnstone on the development of the early human ovum, based on a minute and painstaking investigation of two specimens. The first specimen is an ovum of about fifteen days' development embedded in the uterus, and, according to Dr. Johnstone's view, is one of uniovular twins, which makes it quite unique.

The second specimen is an infundibular tubal pregnancy of about twenty days, the ovum having migrated from the opposite ovary. This article is illustrated by excellent microphotographs.

There is a long paper by Dr. James Young on the etiology of eclampsia, but although the author has done good work he has only added one other theory to the many existing, confirming the old saying that eclampsia is a disease of theories.

Dr. Berry Hart is a great scientific worker, and is always interesting, but his paper on the "Biometric analysis of some insemination-labour and menstrual-labour curves in certain mammalia" is so highly mathematical that many will feel constrained to skip a considerable portion and content themselves with accepting the conclusions. There are two other communications from his pen which should be read by those who are interested in sex-ensemble or so-called pseudo-hermaphroditism.

Formulaire de Thérapeutique Clinique. By Dr. L. Pron, with the collaboration of Dr. A. Cantonnet. Twelfth Edition. Paris: Libraire Maloine. 1914.

It is not to be wondered at that this book has reached a twelfth edition, for the only adverse criticism one is inclined to pass upon it is that the paper it is printed on is unpleasant and the type is very closely set and small. The result is that a comparatively small book of 544 pages is made to contain an enormous mass of information, and this information is conveyed in a remarkably clear and concise way, and seems to be very carefully brought up to date.

The general plan of the book is as follows: 288 pages are devoted to short monographs, alphabetically arranged under the headings of disease or drug. These monographs deal shortly with the general treatment and the treatment by drugs, &c., in the case of a given disease, and in the case of a remedy or group of remedies it suggests applications and gives formulæ appropriate for the suggested diseases. The succeeding 32 pages are devoted to the treatment of diseases of the eyes; this is by Dr. Cantonnet. Diet, sero-therapy, vaccine-therapy, treatment of poisoning; analysis of urine, fæces, gastric juice; mineral waters, and health resorts are sufficiently dealt with in the next 84 pages. The rest of the book is taken up with a condensed exposition of the materia medica proper of common drugs and their preparations.

The book is written in French, and the greatest compliment we can pay the author is to say that a literal translation in English would rank very high indeed among similar works on this side of the Channel. For those who have a working knowledge of French, this book will serve as an extremely useful "statement in brief" of modern therapeutics.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

SURGERY.

Acute Intestinal Obstruction caused by a Large Gall-stone in a Man aged 78 years—Successful Removal. By Francis J. Baildon (*The Liverpool Medico-Chirurgical Journal*, July, 1915).—The author was called to see a man, aged 78 years, who was suffering from symptoms of acute intestinal obstruction. The patient was watched until forty-eight hours had elapsed, and then laparotomy was performed. A large hard lump was soon felt in the small intestine. The loop containing it was isolated and an incision made into it, thus setting free a gall-stone 2 inches long and 5½ inches round the greatest circumference. The bowel was closed by Lembert sutures, and the abdominal wound stitched up with silkworm-gut. During the night the patient, who was very restless, inserted his fingers into the wound, which, in consequence, was badly infected, and ultimately gaped until bowel was exposed at the bottom. Despite this he eventually recovered completely, and with a fair abdominal scar.

The author is of opinion that such a gall-stone could not have been passed along the bile-ducts, but must have ulcerated through gall-bladder into intestine, the track being meanwhile completely guarded by adhesions.

—Charles Bennett.

Excision of Tuberculous Testis, Vas Deferens, and Glands—Crushing of Vesical Calculus formed on Silk Ligature. By Rushton Parker (*The Liverpool Medico-Chirurgical Journal*, July, 1915).—A man, aged 28 years, was admitted to the Liverpool Royal Infirmary suffering from tuberculous enlargement of the left testicle, cord, and inguinal glands, noticed by him for one month.

Through an incision in the fold of the groin the diseased parts were dissected out, the vas being traced up on to the bladder wall, and there ligatured with silk and cut away. The patient made a good recovery.

Six months later he was admitted with bladder symptoms. The presence of a stone was diagnosed, and the lithotrite used to crush the calculus. Along with fragments of a phosphatic stone, there was found the loop and knot of a silk ligature—no doubt that which had been used six months before to tie off the vas deferens, and which had worked its way through the bladder wall.

During the next two years the patient presented himself at the hospital several times for bladder treatment, and on the last of these occasions a ragged ulcer of the floor of the bladder was detected by cystoscopic examination. It is of interest to learn that during the eleven years which have since elapsed the patient has been in good health.—CHARLES BENNETT.

DISEASES OF THE EYE.

Injuries to the Eye in Warfare. By A. W. Ormond, London (*The Ophthalmic Review*, August, 1915).—In this paper, read before the Ophthalmological Society in April of the current year, Ormond reports the outstanding features in a series of nearly 1,000 cases, including men returning from the fighting lines and training to go there. He has seen 3 cases of traumatic amblyopia following the explosion of shells. The first case, a private, age 31, with vision of ability to count fingers at a distance of a yard, and marked limitation of his fields of vision, showed nothing abnormal. He never injured himself moving about the ward. After two months of a half day in bed, full feeding, and the daily subcutaneous injection of strychnine, the vision completely recovered. The second case had been rendered unconscious without breach of surface; but on recovery, he remained blind for seven days. On examination three months later, the vision was $\frac{6}{24}$ with no signs of defect apart from hypermetropia. With + 4D. sph. his visual acuity was improved to $\frac{6}{6}$. The third case had R. $\frac{6}{18}$, L. $\frac{6}{60}$, a week after the occurrence. The fields showed contraction, especially on the temporal side. The optic nerves were markedly pale. No improvement in vision has yet taken place. There is the possibility of atrophy irrespective of the explosion.

Mention is made of a case of a Territorial whose life was probably saved by his glasses. The bullet, travelling from right to left, struck the left lens of his glasses, splintering the glass and grazing the skin beyond the external canthus. The outer half of his left cornea had numerous scars, the result of the broken glass, and the mark on the skin could be distinctly seen. Had he not been wearing glasses the bullet must have entered his orbit and would probably have passed backwards to the brain.

"Explosion injuries" from hand grenades, shrapnel, or high explosives were frequent. Small fragments of metal, gunpowder, sand, and mud are scattered widely, and with such force that many small foreign bodies are driven through the tunics of the eye. In some of the slighter cases these small wounds heal and are forgotten. Two cases of iritis sent back from the front were found to have foreign bodies in the eyes by x-ray examination; and the globes were removed in case of sympathetic inflammation in the other eye. A Belgian soldier had lost the sight of one eye, owing to a bullet having passed through the orbit; there was no evidence of any damage to the sclerotic, but considerable disorganisation of the interior of the eye had occurred. Three weeks later the other eye had vision of $\frac{6}{9}$, with vitreous haze and circumcorneal injection, evidently sympathetic inflammation. The injured eye was then removed, and a small punctured wound of the sclerotic close to the optic nerve was discovered, with a small bead of pus in connection with it. It was thought that a splinter of bone had penetrated the sclerotic, as several sequestra have since come away from the sinus.

The author is of opinion that each case of a foreign body should be considered individually, and not subject to a general dogmatic statement. One case with a foreign body in the lens, with good vision, was left untouched, while another eye with three foreign bodies and poor vision was enucleated, although the initial inflammation had subsided, because the other eye was good, and the danger of sympathetic inflammation destroying it was too great a risk to leave. Some foreign bodies were only discovered after a second or third x-ray photograph had been taken. A Belgian soldier was seen with double buphthalmos and $\frac{6}{60}$ in each eye. No glasses improved the vision, and he had not complained of his sight. He was only sent because the medical officer thought the eyes peculiar. He returned to the fighting line.

The author gives short notes of 28 cases of soldiers blinded in the war. Ten had no perception of light at all. The vision of the others ranges from a mere perception of light to the counting of fingers in one part of the field. Twenty-one suffered from bullets which had traversed the front part of the head from side to side; 4 were wounded by shrapnel; 1 by a hand grenade; and the remainder by explosion, the exact nature of which the men were unable to state; but 1 had been injured by a bullet hitting the magazine of his own rifle and exploding in his face. The remarkable malignancy of indirect bullet wounds of the eyes was seen in several cases. The eyes looked perfectly normal to external examination; but the ophthalmoscope showed great disorganisation of the eyes. Horsley thinks the severity of bullet wounds is proportional to (1) the sectional area of the bullet, (2) its velocity, (3) the amount of fluid present in the medium through which the bullet travels. The last factor may account for the extreme disorganisation of the globe found in these cases in which the eye has not been hit directly at all. In a few cases the optic nerves have been severed, and in others definite rupture of the choroid and the retina can be made out. Out of a large number of cases the author has only seen one case in which detachment of the retina was probably present. There has also only been one case of cataract. It is possible that cataract might not have developed by the time of examination, as the form resulting from injuries which do not rupture the globe is of slow growth, and may take several years before maturity is reached. The main work of the surgeon for these blinded men has been the devising of plastic operations to diminish the disfigurement and to enable the men to wear artificial eyes. Nearly all the men have exhibited extraordinary cheerfulness and contentment. The arrangement by which they are kept together has probably been a great asset in combating the melancholy and depression that might have been expected. The scheme which is being organised by Mr. Arthur Pearson at St. Dunstan's, Regent Park, will also be useful by making them less dependent on external assistance before the period of depression supervenes.

The author has had a case of gonorrhœal ophthalmia with perforated ulcer of the cornea, and heard of another from the same district in France.

Among recruits, six cases of miner's nystagmus were considered unfit for foreign service, while two cases of retinitis pigmentosa were unfit for home or foreign service.

There was only one case of deliberate malingering; but a large number of men are inclined to exaggerate existing defects, and require some reassuring that matters are not as serious as they would like one to believe. On the other hand, many men whose fitness made them desirable soldiers were obviously nearly 50 years of age or more. These facts were not reported to the authorities.

—W. B. Inglis Pollock.

DISEASES OF THE EAR.

Otogenous Brain Abscess. By John Randolph Page (*Journal of Surgery*, &c., June, 1915).—The full title of the paper is—"A case of temporo-sphenoidal abscess discovered by exploration through multiple small incisions in the dura, drained and cured, with remarks on the technique of operation from the standpoint of the otologist."

The author first describes a case of otogenous left temporo-sphenoidal abscess, and then discusses the question of exploration and the methods of evacuation and drainage.

The history of the case is given in great detail, and bringing out, as it does, the difficulties, easily appreciated by those who have to deal with similar cases, which one has to contend with in arriving at a diagnosis, the recital is most interesting, though, let it be said at once, they seem to have been somewhat overrated, and exploration too long delayed, in the present instance. This delay, however, probably makes the case the more instructive, as it brings into relief the salient features.

The case was one of acute middle-ear suppuration followed by mastoiditis, for which a mastoidectomy was performed. All went well for three days, when symptoms suggesting intracranial complication appeared. Further treatment was opposed by the patient for three weeks. At the end of that time, however, the consent of his friends having been obtained, the dura was extensively exposed in the floor of the middle fossa. It was found covered by granulations. Nothing more was done, and the intracranial symptoms subsided for two days. They then reappeared. A physician and a surgeon saw the case with Dr. Page. Lumbar puncture was advised and was carried out, though Dr. Page suggested there was danger that the negative pressure so caused might lead to the rupture of a brain abscess if one were present, a view held by some authorities. Marked improvement, as is often the case, followed this procedure. [Indeed, lumbar puncture has much the same action in masking intracranial symptoms that opium has in acute abdominal conditions.] The spinal fluid was normal. The improvement, however, was only temporary. Again intracranial phenomena presented themselves, paralysis of the face and right arm and aphasia. The optic discs were normal. Nothing more was done at the time, and the patient improved so much that three months from the beginning of his illness his condition seemed almost normal. [Otologists can call to mind similar cases from their experiences.] Dr. Page was now inclined to think that he had had to deal with a case of localised meningitis and encephalitis, and not with a brain abscess. The intracranial symptoms, however, reappeared in a more marked degree, and ultimately exploration was decided on. The granulations which had formed in the mastoid and middle-ear cavities were curetted, the cavity cleansed and rendered, as far as possible, aseptic, and exploration was carried out through several small incisions made in the dura in a crescentic manner, an abscess being found and evacuated and drained. As we have said, it would appear from a study of the case that this might have been done at an earlier stage, but we can quite appreciate the hesitancy shown by the author and by those associated with him. [In all, six or seven consultants appear to have seen the case with the author. Too many cooks ! !]

Dr. Page then discusses at length different methods of exploration, quoting from the writings of many authorities the pros and cons of various procedures. The teaching of general surgery suggests a preliminary subtemporal decompression, and delay for twenty-four hours or so till adhesions have formed between the pia and dura, before opening the brain substance, so as to minimise the risk of meningitis. This is not, however, a usual method, and probably would not be such a safeguard as it sounds. In many cases there is a direct tract from the dura over the roof of the antrum and tympanum to the abscess cavity—the stalk, as Ballance calls it—and through this seems a natural route. Another method is that adopted in the present case, by separate small incisions in the dura. One authority uses a large sized trochar with which he pierces the dura at different points without previously incising it. Another finds danger in exploring the brain in different directions through the same opening. Exploration before opening the mastoid finds little favour, though at one time the dictum that the mastoid disease should first be attacked was not so commonly held.

The different methods of draining a brain abscess are discussed, though not so fully. A counter-opening is rarely required. The author speaks well of celloidin drains.

The whole paper will well repay perusal by those who are in the way of dealing with these cases.—W. S. Syme.

Books, Pamphlets, &c., Received.

Text-Book of Forensic Medicine and Toxicology, by R. J. M. Buchanan, M.D., F.R.C.P.Lond., &c. Eighth edition, revised and enlarged. Edinburgh: E. & S. Livingstone. 1915. (7s. 6d. net.)

The Biology and Treatment of Venereal Diseases and the Biology of Inflammation and its Relationship to Malignant Disease, by J. E. R. M'Donagh, F.R.C.S. London: Harrison & Sons. 1915. (25s. net.)

Diseases of the Arteries, including Angina Pectoris, by Sir Clifford Allbutt, K.C.B. Vols. I and II. London: Macmillan & Co., Limited. 1915. (30s. net each vol.)

Lord Mayor Treloar Cripples' Hospital College, Alton, Hampshire: First Medical Report, by H. J. Gauvain, M.A., B.C. Foreword by the Right Hon. Lord Moulton, P.C., K.C.B., F.R.S. London: Horace Marshall & Son. 1915. (1s. net.)

Health in the Camp: A Talk to Soldiers, by H. R. Kenwood, M.B., Temporary Lieutenant, R.A.M.C. London: H. K. Lewis & Co., Limited. 1915. (3d. net.)

An Index of Treatment by Various Writers, edited by Robert Hutchison, M.D., F.R.C.P., and James Sherren, F.R.C.S. Seventh edition, revised and enlarged. Bristol: John Wright & Sons, Limited. 1915. (21s. net.)

Modern Bonesetting for the Profession, by Frank Romer, M.R.C.S.Eng., L.R.C.P.Lond. London: William Heinemann. (5s. net.)

Diseases of the Nervous System, by H. Campbell Thomson, M.D., F.R.C.P. Second edition, revised and enlarged. With 10 colour and 12 black-and-white plates and 120 figures in the text. London: Cassell & Co., Limited. 1915. (10s. 6d. net.)

Encyclopædia Medica. Second edition. Under the General Editorship of J. W. Ballantyne. M.D., C.M., F.R.C.P.E. Volume II: Aspiration to Chlorodyne. Edinburgh: William Green & Son, Limited. 1915. (20s. net.)

The Medical Annual Synoptical Index to Remedies and Diseases for the Ten Years 1905 to 1914. Bristol: John Wright & Sons, Limited. 1915. (8s. 6d. net.)

Wound Infections and some New Methods for the Study of the Various Factors which come into consideration in their Treatment, by Colonel Sir Almroth E. Wright, M.D., F.R.S. London: University of London Press. 1915. (2s. 6d. net.)

Urgent Surgery, by Félix Lejars. Translated from seventh French edition by William S. Dickie, F.R.C.S., and Ernest Ward, M.A., M.D., F.R.C.S. Third English impression. With 20 full-page plates and 1,086 illustrations, of which 729 are drawn by Dr. E. Daleine and A. Leuba, and 198 are from original photographs. Vol. II: The Genito-Urinary Organs—The Rectum and Anus—The Strangulated Hernias—The Extremities. Bristol: John Wright & Sons, Limited. 1915. (25s. net.)

Simplified Infant Feeding, with Seventy-five Illustrative Cases, by Roger H. Dennett, B.S., M.D. With 14 illustrations. London: J. B. Lippincott Company. (12s. 6d. net.)

The Gynecology of Obstetrics: An Exposition of the Pathologies bearing directly on Parturition, by David Haddon, B.S., M.D. New York: The Macmillan Company. 1915. (17s. net.)

The Operations of Surgery (Jacobson). Sixth edition. Two vols. By R. P. Rowland, M.S., F.R.C.S., and Philip Turner, B.Sc., F.R.C.S. With 797 illustrations (40 in colour). Vol. I: The Upper Extremity—The Head and Neck—The Thorax—The Lower Extremity—The Vertebral Column. Vol. II: The Abdomen. London: J. & A. Churchill. 1915. (£2, 10s. net.)

Alcohol and the Human Body: An Introduction to the Study of the Subject, and a Contribution to National Health, by Sir Victor Horsley, F.R.S., F.R.C.S., M.B., B.S., and Mary D. Sturge, M.D. With a chapter by Arthur Newsholme, C.B., M.D., and a chapter written in collaboration with Sir Leonard Rogers, K.C.I.E. Fifth edition, enlarged. London: Macmillan & Co., Limited. 1915. (1s. net.)

Practical Organic and Bio-Chemistry, by R. H. A. Plimmer. With coloured plate and other illustrations in the text. London: Longmans, Green & Co. 1915. (12s. 6d. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDED 18TH SEPTEMBER, 1915.

	WEEK ENDING			
	Aug. 28.	Sept. 4.	Sept. 11.	Sept. 18.
Mean temperature, . .	59·1°	50·7°	59·9°	58·9°
Mean range of temperature between highest and lowest,	9·0°	18·6°	20·2°	13·1°
Number of days on which rain fell, ...	3	3	2	5
Amount of rainfall, . ins.	0·25	0·14	0·06	0·31
Deaths (corrected), . .	287	253	299	292
Death-rates, ...	13·9	12·2	14·5	14·1
Zymotic death-rates, . .	0·9	0·5	0·8	0·6
Pulmonary death-rates, .	2·6	2·6	2·9	3·1
DEATHS—				
Under 1 year, . . .	40	49	65	61
60 years and upwards, .	67	55	72	69
DEATHS FROM—				
Small-pox, ...	...	...	...	...
Measles, ...	9	5	5	4
Scarlet fever, . . .	3	4	3	6
Diphtheria, . . .	2	...	6	1
Whooping-cough, . .	4	1	2	1
Enteric fever, . . .	1	1	2	...
Cerebro-spinal fever, . .	4	1	2	1
Diarrhœa (under 2 years of age),	12	16	20	25
Bronchitis, pneumonia, and pleurisy, . . .	34	27	33	51
CASES REPORTED—				
Small-pox, ...	...	...	...	...
Cerebro-spinal meningitis, .	6	4	5	1
Diphtheria and membranous croup, ...	31	26	40	42
Erysipelas, . . .	26	31	27	27
Scarlet fever, . . .	139	121	200	166
Typhus fever, . . .	...	...	2	2
Enteric fever, . . .	4	3	7	8
Phthisis, ...	46	28	59	42
Puerperal fever, . .	2	2	1	9
Measles,*	122	73	78	56

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, *1st October*, 1915.

THE

GLASGOW MEDICAL JOURNAL.

No. V. NOVEMBER, 1915.

ORIGINAL ARTICLES.

ON A CASE OF ERYTHRÆMIA.

By G. H. CLARK, M.D., D.P.H.

(From the Department of Materia Medica, University of Glasgow.)

POLYCYTHÆMIA in man may occur as a result of very many different causes. Any factor leading to concentration of the blood will result in an increase in the erythrocyte count. Further, such a result may follow the stimulation to activity of the bone-marrow, as after a severe hæmorrhage, and it may also be associated with the stasis of chronic heart disease and such conditions. In a totally different category we must place the disease known as erythræmia. Splenomegalic polycythæmia, Vaquez's disease, Osler's disease, polycythæmia rubra vera are all different names for the same condition. Since 1892, when Vaquez[1] first described a case of polycythæmia with cyanosis, to the present day increasing detail has been collecting regarding this interesting condition, and one reason for publishing details of this case of erythræmia is that certainly such cases are more numerous than is known. Only by thorough examination *ante-* and *post-mortem*, and by the recording of findings, can genuine advance be made with what is practically a new disease.

I am indebted to Dr. John Ritchie for permission to publish this note about his patient, who was seen by Professor T. K. Monro a few years ago, when the condition was diagnosed. He was also seen by Sir William Osler in June of this year.

M., male, aged 51 years, weight 11 st., has spent about twenty years of his life at sea, and most of that time in and about South American ports. The family history is of no material interest, nor is the personal history previous to seven years ago. At that time, when in Glasgow, the patient had a series of three or four very severe gastric disturbances necessitating the use of morphia. About this time he undertook a trip to Rio de Janeiro, and was vaccinated before starting. M. states that it was very soon after this that he noticed intense redness of the face, with numerous dilated blood-vessels. Whether there was acne or not is not clear. The discoloration of the face was a gradual and progressive process, and for a long time his temples, forehead, and chin were free from discoloration, although the conjunctivæ were suffused, as were the mucous membranes of the mouth and throat. The discoloration was bright red in hue, although it sometimes became purplish. At the outset discoloration in the region of the nasal bone was most marked; but soon after it appeared over the malar bones and later in the ears, chin, forehead, and neck. The depth of colour has changed from time to time, and generally was bright red in cold weather and dusky purple in warm. Along with the facial discoloration there was some discoloration of the hands, back, and sides—much less in degree, but quite noticeable. The tips of the fingers were more deeply coloured than the rest of the hand, and this showed particularly under the free margin of the nails, a purple line some quarter of an inch deep showing there.

Of subjective symptoms nothing of any importance was noted, and even now, beyond a feeling of weakness and a sense of fulness in the abdomen, there is no great discomfort.

At the time referred to above the patient was seen by Dr. T. K. Monro, and erythrocyte counts made then and on subsequent occasions varied between 10 and 12 millions. The spleen was enlarged. Some two years after the condition was first noticed the patient had some teeth extracted, and a good deal of oozing of very dark blood took place. After thirty-six hours the sockets were plugged. As a result of the loss of blood caused by the oozing, the patient felt much better for a considerable time. From then until spring, 1915, nothing of importance took place, but at that time he complained of still further darkening of the face, thinning of the arms and face, fulness in the upper abdomen, and some swelling of the feet and ankles. In May the liver was found to be enormous. On 4th June, 1915, an analysis of the urine was made by Dr. Carstairs Douglas, who reported as follows. The presence of albumen has been a constant feature for years:—

"*Colour.*—Brown, clear.

"*Reaction.*—Acid.

"*Odour.*—Normal.

"*Specific gravity.*—1016.

"*Deposit.*—Very scanty.

"*Albumen.*—Present, abundant.

"*Sugar.*—None.

"*Acetone.*—Absent.

"*Diacetic acid.*—Absent.

"*Indigogens.*—Diminished.

"*Creatinin.*—Fairly abundant.

"*Bile pigments and salts.*—Present, amount moderate.

"*Pus.*—Present, scanty.

"*Blood.*—None.

"*Urobilin.*—A trace present.

"*Urea.*—1·7 per cent = 7·4 grs. per oz.

"*Microscope.*—Centrifuged deposit is scanty and whitish, and is found to consist of pus cells (not numerous), some fine *débris*, cotton threads, and a number of oval translucent bodies like starch grains (? from dusting powder). No trace of tube-casts can be found, and very little epithelium.

"*Remarks.*—I have examined this sample fully, and cannot find any evidence of organic kidney disease. There is a little pus present, but, of course, that might be due to a slight cystitis. The coloration is due partly to bile and partly to the normal pigments, with a trace of urobilin. The density of 1016 is rather high for granular kidney or amyloid degeneration. The urea excretion is fair."

Wassermann reaction was negative.

On 25th July, acting on the suggestion of Sir William Osler, I bled the patient, and had then the opportunity of making a few observations on the blood, which I have been able to amplify since.

M. is a man of medium height and build, rather thin face and hands, large abdomen, and well-developed legs. His face was of a rich purple colour, as also were his ears and neck. The conjunctivæ and mucous membranes of the mouth and throat were also deeply coloured. The hands were not markedly discoloured, although the fingers under the tips of the nails showed a similar coloration. The superficial veins were very prominent, particularly in the arms and legs. On the occasion referred to blood was taken from the lobe of the ear, and blood films were made. The blood showed increased viscosity and deep cyanotic colour. It flowed freely from a large puncture, and coagulated rather slowly. The coagulation time in a number of observations was found to be rather more than seven minutes. When M. had seen Sir William Osler in June, 1915, a blood examination was made, and the following record of the findings was given me by Dr. Ritchie:—

" Red cells, ...	10,972,350
White cells, ...	10,230
Hæmoglobin, ...	132 per cent.
Colour index, ...	0·605

" *Differential count from blood films.*—

" Polymorphonuclears, ...	86·5	per cent.
Mononuclears, ...	5·5	,,
Large lymphocytes, ...	1·75	,,
Small lymphocytes, ...	2·0	,,
Eosinophiles, ...	2·75	,,
Transitionals, ...	0·25	,,
Mast cells, ...	1·25	,,

" Red cells were well formed. No poikilocytes or other morphological abnormality. One nucleated red cell (normoblast) seen."

The results of my observations at the end of July, 1915, were—

Red cells,	from ear,	9,760,000
	from basilic vein,	9,920,000
White cells,		18,400
Hæmoglobin (Haldane),		153 per cent.
Colour index,		0·78

The differential count from films was not materially different from Professor Osler's.

No poikilocytes were observed. Microcytes were seen in large numbers, and some macrocytes. No nucleated red cells were discovered.

As there is no detail published in any report I have seen as to points of chemical importance, an extensive further examination of the blood was made. In all, 920 c.c. of blood were removed from the patient, and from the estimated reduction in hæmoglobin the total amount of blood circulating was calculated as described by Dreyer.[2] This worked out at 10,118 c.c.—the normal being about one half of this. The specific gravity of the blood was found to be 1071·83, as against 1057 to 1066 for normal blood. In normal blood the relative amount of plasma and corpuscles is approximately equal. In the patient's blood plasma was only 24 per cent of the total, and corpuscular elements 76 per cent. For the following chemical analysis of the blood I am indebted to Mr. J. S. Sharpe:—

Chemical analysis of M.'s blood.—

Moisture,	66·06 per cent.
Organic matter and ash,	33·94 ,,

Analysis of ash.—

Iron as Fe_2O_3,	0·112 per cent.
Calcium as CaO,	0·0113 ,,
Magnesium as MgO,	trace.
Phosphorus as P_2O_5,	0·0126 ,,
KCl, NaCl, and SO_3,	0·854 ,,
	0·9899 per cent.

The variation from normal is shown by the following points:—

1. Moisture is deficient and organic matter high.

	Sample.	Normal.
Water, ...	66 per cent.	74 per cent.
Organic matter and ash,	33 ,,	25 ,,

2. Phosphoric acid is very much diminished, and amounts to about one-fifth of normal.
3. Iron, estimated as Fe_2O_3, is about double.
4. Calcium, estimated as CaO, is trebled.

After the bleeding on 25th July the patient improved somewhat in his symptoms, and on 3rd September a further bleeding was undertaken and further observations made. The cyanosis was found to be most marked on the face, and practically absent on the trunk. The face and ears blanched somewhat on pressure, but never completely. The conjunctivæ, noticed before as being much injected, were not quite so notably so. The liver was much enlarged. In the mid-axillary line the liver dulness was 7½ inches; in the nipple line, 7 inches; and in the middle line, 5 inches. The spleen was easily palpable, and appeared hard and somewhat nodular. From right to left margin it extended fully 7¾ inches, and the point of lowest splenic dulness was 3½ inches below the costal margin in the nipple line. The abdomen was much distended and tympanitic below the areas of dulness noted above. The kidneys were not easily palpable, and appeared normal in size. The blood-pressure was 110. Further observations were made on blood counts, &c., which were as follows:—

Red cells, ...	9,650,000
White cells, ...	24,840
Hæmoglobin, ...	160 per cent.
Colour index, ...	0·83

Differential count from films.—

Polymorphonuclears, ...	83·75 per cent.
Lymphocytes, ...	1·75 ,,
Large mononuclears, ...	2·25 ,,
Myelocytes, ...	2·25 ,,
Transitionals, ...	0·5 ,,
Eosinophiles, ...	5·25 ,,
Mast cells, ...	2·75 ,,
Myeloblasts, ...	1·5 ,,

The points of note being—(1) The large number of polymorphonuclears, (2) the increase in eosinophile and mast cells, (3) the decrease in lymphocytes, (4) the presence of myelocytes and myeloblastic cells.

Two nucleated red cells (normoblasts) were seen.

The average size of the red corpuscles was small. Macrocytes were present. Some slight amount of poikilocytosis was seen. The specific gravity of the blood was 1074·21.

The patient was bled and 1,140 c.c. of blood removed slowly from the median basilic vein. As on the previous occasion, the blood was cyanotic and of a viscosity greater than normal. After the bleeding the liver and spleen dulness was again measured, and in the nipple lines the liver dulness was found to have diminished by three-quarters of an inch, while the splenic dulness was fully an inch and a quarter reduced. The patient felt less full about the abdomen and his clothes fitted him more loosely. He did not suffer any discomfort from the large loss of blood, but felt rather better. Three days later I saw him again. The discoloration in the face was decidedly less, and the patient felt rather better since the bleeding, although he was still constantly tired. The discoloration was much less about the temples and chin, and the lines under the finger nails were greatly diminished in depth. Thus the removal of about a litre of blood on two occasions at about one month's interval had undoubtedly a beneficial effect. The patient had in addition a diet suitably modified to diminish his iron intake, and efforts are being made to stimulate his liver activity.

As regards the etiology of the condition, but little is known. Two groups of polycythæmia of unknown origin are recognised—those cases similar to Vaquez's case—erythræmia megalosplenica, of Türk[3]; and those cases with increased blood-pressure, but no tumour of the spleen—erythræmia hypertonica. Jung[4] reports a case of the former type which has many points of resemblance to the case referred to above, where the history was followed for years, and whose tissues were examined *post-mortem*. The facts are interesting and illuminating, and therefore worth recording here.

K., a stenographer, was born in 1858. His father died of phthisis pulmonalis. As a child K. was delicate, at 19 he acquired venereal disease which yielded to local treatment (its nature is not indicated). He became troubled about the age of 31 with swelling of the finger-tips, and black points due to exuding blood appeared under the finger-nails. This was diagnosed as erythromelalgia and treated accordingly, but without effect. In 1900 albuminuria appeared and was never absent subsequently. In 1902 he suffered much from acid dyspepsia, and later in the same year was troubled with renal calculus. At that time it was noticed that his face was florid in appearance, and that his mouth and throat were deep cherry red and his conjunctivæ suffused. His abdomen was swollen on the left side; a hard mass was felt, which appeared more prominent on inspiration and was recognised as the spleen. Its dimensions were made out to be 30 cm. long by 15 cm. wide. The liver was not enlarged. An examination of the blood showed 9,000,000 red cells and 30,000 white. Neutrophile polymorphonuclear leucocytes were increased—90 to 94 per cent of all white cells. A very small number of nucleated red corpuscles were seen. The urine was pale yellow, specific gravity normal, albumen present in fair abundance. A deposit of uric acid was found. The blood-pressure was about 100. In spring, 1903, the red cells had diminished to 8,000,000. Three hundred gms. of blood were withdrawn at that time, and again a similar amount in autumn, with some relief. In February, 1904, the patient was ill and brought up about one litre of blood. The relief afforded was striking. There is no mention in the report of any intercurrent pulmonary condition, although such evidently existed. The spleen at this time was enormous and nodular. The liver was markedly enlarged and soft, but not painful. In April, 1904, the red count was 6,600,000, but on 30th June it had again reached about 9,000,000, with a blood-pressure of 110. The superficial veins were now observed to be very much distended. A detailed report of the patient's condition as at 30th July, 1904, is given in Jung's paper. The liver and spleen were greatly enlarged; the urine was free from deposit of uric acid, but still contained albumin. No morphological elements were present. The patient was then at work and in fairly good health. His face was deeply coloured, as were his throat and mouth, and his conjunctivæ were much injected. He remained well and strong for some years, and continued to work as a stenographer until in 1911 mental disturbances showed themselves. In October, 1912, he complained of headache, depression, and loss of appetite. He was very thin, his voice was hoarse, and he was troubled with cough. Examination showed a much enlarged nodular spleen. The liver was soft and not much enlarged. Examination of the blood showed 2,500,000 red and 19,400 white corpuscles. The urine was albuminous, but there was no sugar. In December, 1912, he was admitted to hospital in a cachectic state, with œdema of the legs. Blood examination showed large numbers of white cells, including myelocytes. The patient died in January, 1913.

The autopsy revealed many points of interest. Both lungs showed an advanced state of tuberculosis. The kidneys were pale, granular, and contracted; the liver, stomach, and intestines were normal. The spleen was enormous and showed numerous nodules, the capsule thick, and the pulp generally light brown in colour. In one part of the pulp was a cavity 3 to 4 centimetres long, filled with a crumbling golden-coloured mass consisting principally of lime salts. Typical Malpighian corpuscles were not found, but high power examination showed a structure resembling bone-marrow. There were present a great number of large cells, without granules, but with a large, clear, round nucleus whose structure was very well shown. The lymphatic glands were enlarged, and there was considerable hyperplasia of the follicles. Red bone-marrow was found to have invaded some of the long bones. Microscopically, it showed erythrocytes, a few erythroblasts, and other typical marrow cells, but in addition an enormous number of myelocytes and a still larger number of myeloblasts. From the blood picture before death and the observations made *post-mortem*, the blood condition was diagnosed as myeloblast leukæmia.

It is interesting to note that of the cases of polycythæmia where a *post-mortem* examination has been made, Rendu and Widal[5] and Moutard-Martin and Lefas[6] have found tuberculosis of the spleen and liver. Saundby,[7] Russell,[8] Osler,[9] Glaessner,[10] and Hirschfeld[11] found much enlarged spleen, but without tubercle. The report by Jung of his case is interesting, as many of the facts correspond closely with the case I have reported.

Outstanding features in the *post-mortem* on Jung's case are the large-sized spleen containing tissue described as structurally like bone-marrow, and the invasion by red marrow of parts of the bone normally occupied by yellow marrow. The liver appears to be a secondary involvement in those cases where it has been enlarged. In cases reported by Weber and Watson,[12] Glaessner,[10] and Wakasugi,[13] erythroblastic tissue was present in great quantities in the bone-marrow. The relative infrequency of nucleated red cells in the blood is not surprising, as in anæmia with very great activity of the bone-marrow nucleated red cells do not invariably enter the circulation. It is notable that in my case poikilocytes are not numerous, although very considerable differences in the size of the cells are seen. A considerable proportion of the increase in cell number is in the form of microcytes, and therefore the colour index is relatively low. In some cases of erythræmia, as reported by Senator,[14] there is no qualitative change from normal. As regards the spleen, in a proportion of cases, no actual lesion has been discovered, and the large size may probably be due to the large amount of blood circulating. The amount must be enormous in some cases. In my case more than 10 litres of blood was estimated to be present. Boycott and Douglas,[15] using the carbon monoxide method, estimated from about 5,000 to 10,750 c.c. of blood in four cases. Certain errors have been shown to occur in the use of the carbon monoxide method for estimating blood volume, and the figures must be increased to allow for the errors. Thus the minimum amount as estimated and corrected is 7,820 c.c. of blood, and the maximum 17,700. It is difficult to understand how such a quantity of blood as the last, representing 26·3 per cent of the body weight of the individual, could be propelled through the blood-vessels. In my case it is noteworthy that the removal of about 10 per cent of the blood circulating caused a considerable reduction in the size of the spleen as determined by percussion. In a number of cases the enlargement of the spleen is accounted for by an actual lesion. In Jung's case the spleen tissue showed erythroblastic change. Such change was also reported by Hamilton and Morse[24] and by Rosengart.[26]

In other cases tubercular disease was found, and, in a few cases, yellow nodules, whose structure was not described. With reference to the presence of erythroblastic tissue, it is interesting to note that Bryce[25] refers to the spleen as an active hæmopoietic organ in lower vertebrates. In most mammals it plays a part in blood formation during a certain period of fœtal life, after which this function is transferred to the bone-marrow. The part played by the liver in most of the cases appears to be but small, as many of those reported have shown no liver change. Lommel[16] has reported a case of portal obstruction associated with polycythæmia, and considers that his case is analogous to those cases of congenital heart disease with polycythæmia. References to cases reported might be multiplied considerably, but the main facts are shown clearly in those referred to. In many cases increased activity of the bone-marrow is shown; in most of the cases increased size of the spleen—often very greatly increased—is a feature; in some cases increased size of the liver is found.

As regards the cause of the condition, it is obvious that primarily we are dealing with a condition where the normal balance between red cell production and destruction has been lost. Granting an increase in production over destruction, the increase in blood volume is readily understood, as were fluid not added to the blood, circulation would be impossible. As to which of the two sides is at fault the data we presently possess are insufficient to determine. The cause may vary in different cases. In my case and in Jung's, gastric symptoms appeared before the polycythæmia was observed. Whether there was any relationship between the two or not is uncertain, but it is interesting to note that Weintrand[17] points out that in poisoning, where the liver is injured, a polycythæmia may appear. This was also my experience[18] in animals suffering from delayed chloroform poisoning. Luce[19] supports the view of Weintrand, who also maintains that disease of the liver and spleen results in diminution of hæmolytic function. This may be true, but it does not in any way explain the increased activity of the bone-marrow. That the bone-marrow plays an important part in the process is clearly shown by such cases as Jung's and Rosin's,[20] where a polycythæmia at the earlier stage of the illness gave place to an anæmia before death associated with a definite leukæmia. This suggests that the marrow activity was increased, and that the erythroblastic tissue became exhausted, a gelatinous change being seen in one case. Bence,[21] Breuer,[22] and Lommel[16] consider that polycythæmia is due to degradation of the hæmoglobin, and that more cells are thus necessary to supply the tissues with the necessary oxygen. Seufert[23] supports this view, and holds that the oxygen insufficiency stimulates the bone-marrow to activity, as occurs at high altitudes. I have not been able to find out how far these last writers have tested their hypotheses. My own observations in the case of M. show that the oxygen capacity of the blood in erythræmia bears a very close relationship to that of normal hæmoglobin. The increased percentage of hæmoglobin in the blood is associated with an increased oxygen capacity to approximately the same degree. I have tested this repeatedly, and the results are constant.

In conclusion, none of the theories advanced is entirely satisfactory. Erythræmia may occur as a consequence of disease of one or other of the organs connected with erythrocyte production and destruction. It may be due to errors in production alone, or to errors in the hæmolytic organs, or to both. It is probably not due to errors in the hæmoglobin. The case of M. will be watched carefully, and a further report of his condition published in due course.

An excellent summary of 181 cases was published in 1912 by Lucas,[27] and contains references to upwards of 200 papers on the subject.

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FURTHER NOTES ON CASES IN GENERAL PRACTICE.

By JOHN F. FERGUS, M.A., M.D.

By the courtesy of the Editors I am afforded the opportunity of submitting to the readers of this *Journal* a few further notes on cases occurring in general practice, in continuation of those which appeared in the July number.

I.—*Epileptic convulsions as the first symptom of alcoholism.* It has fallen to my lot to see several cases, all in male subjects, in which the first indication that the patient was drinking to excess was a convulsion of an epileptic type. In none of the cases had there been any previous attack of an epileptic character, nor any hereditary tendency to the affection, the excessive use of alcohol being apparently the sole determining factor in the epileptiform seizure.

Case 1.—As illustrative of the condition referred to, I may cite the case of a gentleman whom I was urgently summoned to see in one of the hotels of this city on a Saturday afternoon, the story given being that he had suddenly taken a fit in the smoking-room, where, when engaged in conversation with a friend, he had suddenly got "queer" looking, did not seem conscious of his surroundings, and had rolled off his chair on to the floor, where he underwent a seizure characterised by marked clonic convulsions of the limbs. There had been some frothing at the mouth, but the tongue had not been bitten, nor had urine or fæces been passed involuntarily. The fit was said to have lasted "for two or three minutes." When I saw him shortly afterwards he was somewhat confused, and, to some extent, in the condition one would expect after an epileptic attack of moderate severity; but there was neither then nor subsequently any repetition of the fit, though the subsequent history of the case showed that his mental equilibrium had been considerably upset.

The friend who accompanied him from England was one of the directors of an industrial concern in which the patient was works manager, and the account given of the patient by his director was that he was a quiet, hard-working man, zealous for the interests of his company, and a valued servant, with, perhaps, a tendency to worry unduly over business affairs. The director was at a loss to account for the patient's sudden seizure, but subsequent questioning of the patient himself elicited the admission that he had been drinking heavily and in secret, though not for any prolonged period, and that previously he had been a temperate and healthy man.

There was nothing in his previous history to suggest previous attacks of epilepsy, or a tendency to that disease, nor was there any history of specific disease, the patient, a man of about 38 years of age, being married, with a fairly numerous and healthy family, and no history of miscarriages on the part of his wife.

His tongue was dirty and tremulous, and he seemed somewhat confused after his fit, of which he had no recollection. As he was a valued servant of the company, his director suggested that a nurse should be got in to be with the patient overnight, a suggestion which was carried out, and after a tolerable dose of calomel, to be followed by a saline in the morning, he was given a mixture of bromide with a few grains of chloral as a sedative to tide him over the night.

He was very much better the next day—Sunday—and continued improving during the day, so much so that in the evening he insisted on the nurse being dismissed, a proceeding to which there seemed no valid objection in his then very much improved state.

During the night, however, about 1 o'clock on the Monday morning, I was urgently summoned to the hotel to see the patient, who was said to have got suddenly violent and maniacal. On arrival I found the corridor of the hotel in the vicinity of the patient's bedroom in a turmoil, with relays of hotel porters taking their turn in attempting to keep him quiet. It transpired that after locking his door he had barricaded it with the bedstead, and using the top rail of the bedstead as a "taking-off" place he had managed to climb through the lower segment of the swinging fan-light above the door, clad only in his pyjamas, and taking with him two pillows, which he was subsequently discovered nursing, one on each arm, in the corridor two floors lower where the public rooms of the hotel are situated, and where indeed some of the guests of the hotel were still in evidence, among whom the apparition of a gentleman clad only in pyjamas and nursing two pillows—I subsequently ascertained that he had not twins in his family, nor any reasonable expectation of their advent—naturally created some astonishment and alarm. It appeared that he had taken the idea that people with hostile intent were trying to come into his bedroom through the window—which, considering that it had a sheer drop of some 50 feet to the street, was manifestly an impossibility—that they were making faces at him and threatening him, and to escape them he had climbed through the fan-light over the door, the locking and barricading of the door being presumably to hinder as much as possible his enemies in their pursuit.

He was still wildly excited when I saw him, alternately attempting to rush out of the window to grapple with his imaginary enemies, and cowering, trembling and shaking, in his bed attempting to get away from them. In a word, he was more or less in a condition of delirium tremens. He was for the most part incoherent, but had a tolerably definite story, which he repeated several times, of having been captured by two red-coated soldiers, who had pulled him about and had then shut him up in a small room into which they accompanied him. This was at first regarded as a hallucination, like the faces at his window, but ultimately proved to be more or less a real experience, viz., his capture on the lower corridor by two of the station porters of the hotel wearing the red jackets in which they meet incoming trains, while the small room in which he had been shut up was the lift in which he had been conveyed to his bedroom floor above.

After the administration of a sedative he became quieter, and was ultimately left for the night in charge of hotel porters, who received strict injunctions to keep a constant watch on him, while his friend, the director, promised to communicate with a male relative—a brother-in-law—in Glasgow whose address he had got from the patient. About 9 the same morning the patient was seen again, and was found to be rather dull and lethargic, refusing to take his food or to dress properly, simply pulling on a jacket and trousers over his pyjamas. He was still rambling and incoherent, and still harboured some of his hallucinations, but the wildness and excitement had gone.

As his mental state was very unsatisfactory, and as it was inexpedient that he should remain in the hotel, it was determined, on consultation with his brother-in-law, that it might be wise to place him in a mental hospital under an emergency certificate. Accordingly we drove with him out to Gartnavel Asylum, where he was seen by Dr. Oswald, who, however, very properly refused to accept him as a patient without the consent of his nearest relative, viz., his wife, who had been wired for but was not expected to arrive till the next morning. The brother-in-law then volunteered to look after the patient at his house in Hyndland, and promised to call in his own family doctor as soon as possible, while I arranged to ring up this doctor at once and give him details of the patient's condition as I had seen him. Accordingly the brother-in-law departed in a cab with the patient, who had formed the idea that he was in Edinburgh, and was going out to Penicuik where he had formerly been in business, while I rang up the doctor asking him to call on the patient, and giving details of his illness. In the afternoon the doctor rang me up to say he had seen the patient, and that he did not think his condition, as he saw him, serious, and that he had recommended the brother-in-law to take him out for a walk and to try to keep him interested. I was glad to hear that the patient had apparently recovered so well, and thought I had heard the last of him, but in this I was much mistaken.

Happening to be in the hotel about 10 o'clock the same evening to see another patient, I was intercepted by the night hall-porter. "Do you remember the gent. that was kickin' up a row last night, and climbed out into the corridor through the fan-light?" he asked. I indicated that I was not likely readily to forget him. "Well," he went on, "as I was comin' over in the tram-car to my work here this evening I saw a big crowd near Eglinton Toll, and in the middle of it, raisin' 'ell, a gent. that was very like the gent. as was here last night. He still had his pyjamas on, and was shoutin' and talkin' no end. The police was at him when I lost sight of him, and I fancy they was takin' him off to quod." As I had left the patient in the apparently safe custody of his brother-in-law, it was difficult to see how he could be in Eglinton Street at a late hour of the evening; but the "clue of the pyjamas," as Sherlock Holmes might say, seemed a strong one, and whetted my curiosity as to the denouement.

It was afforded me early next morning when a gentleman, previously unknown to me, and who announced himself as a nephew by marriage of the patient, was ushered into my consulting room. From what he told me it transpired that the patient, after going home with his brother-in-law, had been seen during the course of the day by the latter's family doctor, who found the patient so much quieter, and so much improved generally, that he thought lightly of his condition, and recommended the brother-in-law to take him out and keep him interested. Accordingly they went down town, where the patient, evidently still under the impression that he was in Edinburgh, proposed a visit to Penicuik, to which the brother-in-law—a seafaring man at leisure for the time—offered no decided objection, and they repaired to Queen Street Station. Here evidence that all was not yet well with the patient was afforded by his having a violent altercation with the booking-clerk over the price of the tickets, the patient alleging that he was being swindled in having to pay several shillings for the tickets, whereas the journey from Edinburgh to Penicuik had never previously cost him more than a few pence. He was ultimately pacified, and as there was still some time before the train started he proposed that he should go to a barber's for a shave and wash-up, of which he was much in need. A hairdresser's shop was found near the station into which the patient disappeared, the brother-in-law electing to remain outside to wait for him and to enjoy a smoke the while. He waited and better waited, but the patient never re-appeared, and, at last, his patience exhausted and his suspicions aroused, he entered the shop to find that there was another entrance to it through which the patient, his tonsorial operations completed, had made his exit some time before, and was now lost to mortal ken. The unfortunate and unsuspicious brother-in-law, now thoroughly alarmed, began a search for his missing relative, which was something like the search for the proverbial needle in a haystack. He tried the hotel without success, he tried his own house in the hope that the patient might have returned there, but still without avail, and then he called in the aid of my informant, the nephew, and the two began a systematic hunt for their errant relative.

> "They sought him east, they sought him west,
> They sought him all the city thorough.
> They only saw the darkling night,
> They only ploughed a lonely furrow."

Lonely at least till the small hours of next morning when they ran their quarry to earth in one of the police offices of the city, where he had been conveyed by the constables into whose hands he had fallen during the course of the evening when he was arrested for creating a disturbance and being disorderly, *i.e.*, probably playing the leading part in the episode which my friend, the hotel night-porter, had witnessed from the tramway car. My informant, the nephew, told me that they had found the patient interned in what he termed "the cage," which he described as a cell in which peculiarly violent prisoners are incarcerated, and in which they can be under constant observation.

The patient's true condition was explained to the police officials, and as his wife shortly arrived on the scene, it was not long till he was under treatment at Gartnavel, where he remained for some three months, greatly to his own benefit, and was ultimately discharged quite recovered.

I have described this case in perhaps tedious and trivial detail, as it exemplifies not only the point referred to in the heading of this part of this paper, viz., the occurrence of epileptic convulsions as the first indication that a patient, hitherto unsuspected of drinking, is taking too much alcohol, but also because it shows that such an attack of epileptic convulsions may be the precursor of more serious conditions, amounting in this case to a severe and tolerably prolonged upset of the mental balance.

Case 2.—A second case where an epileptic seizure was the first indication that the patient was exceeding in alcohol was that of a gentleman, aged about 45 years, who was manager of a concern, a part of whose business was the supplying of wines to the public. He was known to "do himself" pretty well both as regards food and drink, but he was by no means a drunkard, but rather a discriminating drinker who rejoiced in that increasingly rare possession, a "palate," which he found of service to him in sampling the fine wines in which it was part of his business to deal.

I was urgently summoned to see him one afternoon with the information that he had taken a fit, which from the description I got of it appeared to have been typically epileptic in character. After my arrival he had another fit, which was of an epileptic type, with clonic movements of the extremities and to a lesser extent of the head; but it was of short duration, and was not followed by any stage of unconsciousness or stupor, but on the contrary by excitement and loquacity with a tendency to incoherence. He was due at a meeting of his directors about the time he took ill, and he insisted that he was quite able to appear at it, and got wildly excited when told that he was quite unfit to do so. It was only by removing and hiding his trousers and boots that he was prevented from making an attempt to be present at the meeting.

A smart dose of calomel, with the administration of a sedative over a couple of days, and rest in bed, put this patient to rights, and he had no return of his fits; but he ultimately drifted into chronic alcoholism, and died a few years later. Though known to be fond of the good things of this life, both fluid and solid, his fit was the first indication that he was taking too much alcohol.

CASE 3.—A third case was very much similar, but it occurred in a much younger subject, viz., a young man of about 25, cashier to a company, and previously regarded by his employers as a sober, steady, and industrious young man. It transpired that he had been taking a good deal of alcohol in secret, and though he had never been outwardly under its influence, nor had it interfered with his work, yet its effects manifested themselves for the first time in an epileptic seizure of considerable severity, but not followed by mental aberration or by undue excitement, but rather by depression and feelings of shame. He made a fresh start in another situation, and I lost sight of him, so do not know if there was any recurrence of the fit.

Case 4.—A fourth case was not on all fours with those recorded above in that the epileptic seizure occurred in a patient who was then suffering from his second or third attack of delirium tremens, and who was, of course, notably an alcoholic. He was a gentleman of about 35 years of age, cursed by a competence and by innate idleness, who gave his friends a good deal of trouble by his drinking habits, which culminated on several occasions in delirium tremens. I had been summoned to see him in such an attack, and as no male attendant was immediately available I was taking a turn in watching the patient till the attendant should arrive, and incidentally in preventing him from smashing the furniture, to which he was decidedly prone during his attacks. His illness was a typical delirium tremens of tolerable severity, with all the "horrors" and loathsome hallucinations so characteristic of that condition, varying from white rats to the devil waiting for him in the next room with red-hot pincers. He was very restless and excited and difficult to manage, but ultimately at my suggestion he settled down to the comparatively quiet and pleasant occupation of killing, with his slipper, imaginary white beetles with pink eyes, which he averred were issuing in myriads from one of the cushions of his arm-chair. Ultimately, finding the continuous slaughter of the hapless coleoptera rather fatiguing, he desisted and tumbled into his bed and asked for a cigarette. He was too tremulous to strike a match for himself, and while I was holding a light for him to his cigarette, the waggling cigarette suddenly dropped from his tremulous lips on to the bed, and he rolled over in a violent epileptic attack. There was no cry, there was no warning or "aura" of any kind, but the fit, which included a short tonic stage, came on with the suddenness of a gun-shot, involved practically the whole body, and lasted for perhaps two minutes. He came out of it almost as suddenly as he went into it, and without any stupor or lethargy; on the contrary, he was as excited and actively delirious as he had been before the occurrence of the fit. He had but the one fit, and, as was to be expected, he was rather slow in recovering from his delirium tremens, but he ultimately pulled through it, and though still more or less a chronic soaker, he is a little less so than formerly, and up to this date has had no further attack of delirium tremens.

Incidentally it may be mentioned that this patient in a previous attack was so dangerous to himself and so destructive of the furniture that he had to be locked up in a room with the windows closely barred and shuttered, and from which every article of furniture had to be removed excepting his bed and a wardrobe—emptied of everything which he might use for lethal purposes—which was too heavy to be readily moved. Happening in his restless, aimless movements to open the door of the wardrobe, and seeing the stall or box-like compartment within, some maladroit association of ideas asserted itself and he clambered inside. The sound and sight of running water issuing from the wardrobe soon revealed that in his confused state he had mistaken it for the stall of a urinal, and was using it as such; while on another occasion the suggestion of a telephone public call-box proved too strong, and he spent a busy night in the wardrobe ringing up every friend he had in Glasgow.

CASE 5.—Another case has recently been related to me by Dr. Leonard Findlay, who tells me that when on board ship he was called in to see a cook who had suddenly tumbled down in a fit in the ship's galley, the fit apparently being of a typically epileptic character. The man was not known to be taking alcohol to excess prior to the fit, though it was known that he consumed a fair quantity of alcohol, but in this case also the fit was apparently the first symptom of alcoholism.

It is possible that epileptic fits as the first symptom of alcoholism may be fairly common in the experience of others, and it may be asked why I have recorded what is perhaps a tolerably familiar phenomenon to many medical men in general practice. To this I would reply that I do so simply because I do not happen to have seen stress laid on the fact that an epileptic fit may occur as what may be termed the primary symptom of alcoholism. Sir William Gowers classifies chronic alcoholism, along with chronic lead poisoning, as among the rare causes of the first fit, and if, with his wide experience, he considers alcoholism a rare cause it cannot be a very common one. But it is to be noted that in mentioning chronic alcoholism as a cause of epileptic fits he apparently refers to a condition already known to be established in the patient prior to the epileptic fit, whereas in the above cases, with the exception of the gentleman who was suffering from delirium tremens when he took his fit, there was no previous indication of alcoholism; indeed, the fit was the first evidence that the patient was drinking to excess, and in at least two of the cases the excessive use of alcohol had been, as far as one could ascertain, of but short duration.

Presumably the toxic effects of the alcohol were the cause of the fits, but why the toxin should have selected the cortex of the brain, producing motor phenomena without previously producing any of the intellectual phenomena that one usually associates with the excessive use of alcohol, is not so easy to determine. True, in the first case recorded, there was very severe intellectual disturbance, lasting for some days and amounting, indeed, to practically post-epileptic mania; but this came on after the fit, and prior to the fit there was no indication that the patient was taking too much alcohol.

It may suggest itself to some—as has, indeed, been suggested to me by a medical *confrére*--that all those cases may have been due to cerebral syphilis. Certainly in one case, that of the gentleman with delirium tremens, there was a definite history of syphilis, and traces of its ravages in an eroded palate which altered the quality of his voice; but even in his case the alcohol seemed the determining factor, as the fits ceased with the stoppage of his alcohol, and have not recurred under the more moderate potations which his fits have frightened him into taking since then; while, if the fits were due to syphilis, one would expect them to persist in the absence of anti-syphilitic treatment, which this patient had not had for many years. While syphilis may or may not have been a factor in the second case cited above—the case occurred before the Wassermann reaction became of daily clinical use—where the patient had been, generally speaking, a pretty hard liver. there was little, if any, reason for suspecting syphilis in the other cases; indeed, the past history of the patients was against such a presumption. There seems no essential reason why one should presuppose some organic disease such as syphilis as necessary to account for the fits. Alcohol, whatever virtues it may have, is known to have markedly toxic properties, and it seems reasonable to suppose that the toxic properties of the alcohol were sufficient of themselves to produce the fits, taken as the poison had been in large quantity; though exactly in what manner the poison acted, and why it selected the motor areas of the brain for the manifestations of its effects, seems as much a mystery as the exact cause and mode of production of the fits in idiopathic epilepsy, that is, epilepsy apart from traumatism or other gross lesion of the brain.

In conclusion, one may emphasise the fact that these fits were essentially epileptiform in character, and could in no way be mistaken for excessive tremor due to alcoholism. In the case of the patient suffering from delirium tremens there was an undoubted, though short, tonic phase during which the head was rotated to one side with deviation of the eyes to the same side, while the body generally was in a state of tonic spasm; while in the other cases in which I witnessed the fits, though the tonic stage was not so well marked, there was a short period of rigidity which might be construed as a tonic phase. In all the cases there was complete unconsciousness during the fit, and the clonic convulsions were markedly of the epileptic type.

In none of the cases does there appear to have been any aura, the onset being abrupt, and, indeed, startlingly sudden, while in none of them was there the so-called "epileptic cry," nor, as far as my memory serves, was there any loss of control of the sphincters; and instead of stupor or lethargy supervening when the fit was over, there was in most of the cases a decided tendency to excitement and loquacity, if not even incoherence.

In the hope that these cases may be of some interest to others to whom the conditions described above may possibly not be very familiar, I venture to place them on record in this *Journal.*

II.—*Vaccine inoculations for hay fever.*

I have recently had occasion to try the effects of inoculation treatment in several sufferers from hay fever, in whom many and varied other forms of treatment had previously failed to produce any beneficial result, and below I append a short account of some of these cases with the results attained.

The treatment of hay fever by inoculation with pollen vaccine involves, in the first place, a specific diagnosis that the patient is actually a sufferer from hay fever, because it is obviously useless to immunise against pollen unless one is sure that pollen is the actual cause of the symptoms from which the patient is suffering.

This specific diagnosis can be made by means of the ophthalmo-reaction—seen only in sufferers from hay fever—produced by the dropping on to the eyeball of the patient of dilutions of pollen toxin of varying strengths, which, in the true sufferer from hay fever, will produce some inflammation and smarting of the conjunctiva, and possibly some of the other sensations of an attack of hay fever; whereas, in a subject not susceptible to hay fever, the dilutions of pollen toxin will not produce any effect at all in the eye. Using the dilutions of pollen toxin in definitely graded strengths, one is able to calculate from the strength of dilution which first produces the characteristic ophthalmo-reaction the appropriate dose of vaccine which should be administered either for the prophylactic or therapeutic treatment of the disease.

The vaccine used in the cases here recorded was the "Pollaccine" of Messrs. Parke, Davis & Co., who also supply a "Hay Fever Reaction Outfit" for the ophthalmo-reaction, in which the dilutions of pollen toxin are put up in capillary tubes, with varyingly coloured ends to distinguish the different strengths, the dilutions running from a 5 units strength up through 15, 50, 150, &c., units strengths up to a 5,000 units strength, each successive tube containing a dilution approximately three times stronger than that in the tube immediately preceding it in the series. The ends of a tube having been filed off, the contents are expressed on to the eye by means of a rubber teat fitted over the tube, the application being made in a good light, the patient being seated facing the light with his head thrown backwards and the eyes directed upwards. The first sign of the reaction is usually a tickling sensation at the inner canthus of the eye, accompanied, or shortly followed, by a slight but quite definite reddening of the caruncle and its neighbourhood, which may be readily detected by a comparison of the two eyes. If this reaction is obtained in about three minutes the test is complete, and the dose of vaccine to be administered can be calculated from the unit strength of the dilution of pollen which produced the reaction. If, however, no reaction is obtained within the time indicated, the other eye should be tested with the contents of the next stronger tube, and so on, using alternate eyes until the reaction is produced. If no reaction is produced by the whole series of tubes, then the patient may be definitely pronounced not to be a sufferer from hay fever, and his symptoms must be attributed to some other cause, probably some abnormal condition of the nasal mucous membrane. The ophthalmo-reaction is not severe, and, as a rule, involves only slight and evanescent conjunctival or nasal irritation to the patient.

The ophthalmo-reaction having been produced, it is easy to calculate by means of tables supplied with the hay fever reaction "outfit," the dose of vaccine to be given either for the prophylactic inoculations against the disease, which should be carried out during the winter and spring, or for the therapeutic inoculations to be administered when the patient is actually suffering from the disease or is likely very shortly to do so. The best prophylactic dose is said to be one-third of the number of units strength which just produced the ophthalmo-reaction, while the most appropriate therapeutic dose is stated to be one-tenth of the number of units strength which just produced the reaction. As the vaccine itself is put up in 1 c.c. bulbs, varying in strength from a 4 units strength through a 20 and 100 units strength up to a 500 units strength per c.c., the appropriate dose in any individual case can be readily measured by a sterilisable hypodermic syringe graduated in minims. The inoculations, in my experience, produced practically no local reaction at the site of inoculation, and no constitutional disturbance whatever—not even the attack of urticaria which is said sometimes to supervene.

CASE 1.—The first case was that of a young lady of about 20 years of age, who for several years had suffered from hay fever, with marked asthma, sneezing, running of the eyes and nose, and a good deal of general prostration during the attacks. The affection in her case was hereditary, as her father had been a sufferer from the disease, and her younger brother (referred to under Case 2) was also a sufferer. Her treatment was begun towards the end of March of the present year, and, after a preliminary examination of the nose and throat, which revealed no abnormal condition to account for her symptoms, she was tested by the ophthalmo-reaction to determine her susceptibility. She was found to give the characteristic reaction with the 50 units strength capillary tube of pollen extract, a reaction with this strength being said to be obtained in 19 per cent of the cases not actually at the time of the test suffering from the disease. The best average prophylactic dose being one-third of the number of units strength required to produce the ophthalmo-reaction, her dose of vaccine was calculated to be one-third of 50 units—*i.e.*, about 15 units, or three-fourths of the 20 units per c.c. bulb of pollaccine, these 15 units being approximately contained in 14 minims of the contents of the bulb.

Without going into tedious detail as to the increased doses gradually administered to this patient as her susceptibility to the ophthalmo-reaction became less marked, it may be stated that she had nine inoculations in all, with an average interval of a week between each, and that whereas at the beginning of the treatment she gave a well-marked ophthalmo-reaction with 50 units strength, at the end of her course—which had to be terminated owing to her going on a visit to England—she gave no reaction with the 500 units strength. There was practically no local reaction at the site of inoculation, nor at any time was there any suggestion of a negative phase—*i.e.*, an attack of hay fever induced by an overdose of the vaccine.

Case 2.—A schoolboy, æt. 15 years, a brother of the previous case. He had suffered very considerably during childhood from asthma—principally in spring and summer—which had, indeed, somewhat retarded his physical development, so that he had been regarded as rather a delicate boy. Along with the asthma he had had other symptoms of hay fever—sneezing, severe watering of the eyes, &c.—but the asthma had been the predominant symptom. When he came for treatment he was home for the Easter holidays from Harrow, where the exercises and games incidental to a public school had much improved his physique; but his parents, anticipating a further attack of hay fever during the summer, were anxious that treatment by vaccine inoculation should be tried.

Examination of his throat and nose showed considerable hypertrophy of the turbinates on the left side, which were subsequently cauterised; but from the history of the hereditary nature of his illness, and from the symptoms themselves and their time incidence, it was considered that his condition was more likely to be due to genuine hay fever than to any local condition in the nose, a conjecture which the test by the ophthalmo-reaction confirmed. He was apparently less susceptible than his sister, as he gave no reaction at all till the 150 units strength of pollen extract had been used, the reaction, however, being so slight as to be equivocal; but the 500 units strength produced a well-marked—indeed, rather violent—reaction, with much reddening and smarting of the conjunctiva. The dose of vaccine, therefore, was something between that necessary for the 150 units strength reaction and that necessary for the 500 units strength reaction, and the initial dose of vaccine was about three-quarters of a c.c. of the 100 units per c.c. bulb of pollaccine. As he was only home for the Easter holidays his treatment had to be compressed into the month of April, during which he had seven inoculations of varying strength, according to the indications of the ophthalmo-reaction. On his return to Harrow the inoculations were discontinued, so that he cannot be considered to have been fully treated; but, even before the inoculations ceased, he gave no reaction with the 500 units strength of pollen extract.

The results in those two cases were not markedly satisfactory, and, indeed, all that can be recorded is a slight improvement in both. In a letter received from the patients' mother at the end of June she says:—"My son and daughter think they are a little better for their inoculations, but it has not cured them. The boy's eyes and nose are much better, but the asthma was pretty bad at Harrow, and he has had to come home. We have come to the seaside, and he seems much better here. My daughter has not had any asthma so far, but her eyes and nose are no better." The result, therefore, in both cases was rather disappointing, even admitting that these patients' treatment was slightly curtailed owing to their having to go to England.

Case 3.—The third case was that of a gentleman of about 54 years of age, in business in Glasgow, who, off and on, had suffered a good deal from hay fever, principally characterised by congestion and running of the eyes, with frontal headache, sneezing, and some running of the nose, while he also suffered considerably during the attacks from prostration and depression. He has never had asthmatic symptoms; but it is worthy of note that one of his children, a little girl of about 9 years of age, suffers from severe asthma, which was formerly even more severe when the family were residing in the country, but which has been less marked since they came to live in Glasgow about two years ago, though this summer the child had a violent recrudescence of her asthma when the family were on holiday in the country, so much so that she had to be brought into town, where her condition quickly improved. Her father, who did not come under treatment till the latter half of May, seemed a fairly susceptible subject, as he gave a typical reaction with the 150 units strength of the pollen extract, which produced well-marked reddening of the conjunctiva. As he had already begun to show some symptoms of an attack of hay fever—principally sneezing—the dose of vaccine to be administered had to be something more nearly approximating to the therapeutic rather than to the prophylactic dose—*i.e.*, more nearly one-tenth of the number of units strength which produced the ophthalmo-reaction than the one-third of the units strength which forms the estimated best dose for prophylactic treatment—and accordingly he was begun with rather more than three-quarters c.c. of the 20 units per c.c. bulb of pollaccine. He had in all ten inoculations, the dose of vaccine being kept comparatively small and repeated at intervals of a few days, as is recommended for the therapeutic treatment when the disease is actually present. The dose, of course, varied with the results of the ophthalmo-reaction, but without entering into tedious detail it may be generally stated that his susceptibility, as tested by his ophthalmo-reactions, considerably diminished during his treatment.

Owing to the exigencies of his business arising out of the war he was less in the country than usual during the course of the summer, and consequently less exposed to the pollen toxin, so that any protective qualities which his inoculations may have had were not put to the fullest test; but he tells me that he considers his inoculations were beneficial, and that when he was in the country and exposed to the pollen toxin, though not quite free of the symptoms of hay fever, he did not suffer from them so acutely as formerly, and that they were limited to slight sneezing and very slight running of the eyes. His wife, however, is more emphatic in the expression of her opinion that there has been a considerable improvement.

In this case again, however, there was not what one could designate as a cure of the disease.

Case 4.—Another case was that of a young lady of about 25 years of age, who for some years had been a martyr to hay fever in the summer, with very marked and very severe symptoms. When the attack was on she sneezed almost continuously, there was intense reddening and marked swelling of the eyes, which, indeed, became almost closed, and the accompanying prostration and depression were such that she frequently had to be several days in bed. She described her life as a misery to her when suffering from an attack, and for several years she had been unable to accompany her family to their country quarters in the summer, but had to go by herself to the coast, where her symptoms were somewhat less urgent. She had not suffered from asthma, but there was a history of past attacks of asthma in one of her brothers during his boyhood and adolescence. There was nothing in her nose to account for her symptoms.

She had begun to suffer from symptoms of hay fever—occasional paroxysms of sneezing—when she consulted me at the end of June, and, as might be expected from her history, her ophthalmo-reaction proved her to be a true sufferer from hay fever and very susceptible to its influence, as she gave a well-marked ophthalmo-reaction with the 15 units strength of pollen extract, *i.e.*, the second weakest dilution used. The appropriate dose of vaccine was administered, and the dose gradually increased, the dose being controlled by the ophthalmo-reaction, which showed a rapidly increasing degree of immunity.

She had, in all, nine inoculations, and the results were satisfactory in the highest possible degree. The attack, which seemed beginning—as indicated by the paroxysms of sneezing—when she first came under observation, was cut short, and beyond very slight and very occasional sneezing she had no symptoms during the treatment, while the after-results were even more satisfactory. Having seen her this autumn, she tells me that she has been to all intents and purposes cured, and that not for years has she known such comfort and such freedom from the misery caused by her symptoms. She has been able to be in the country during the summer and to motor along dusty roads through hay fields with practically not a symptom except very occasional and transient sneezing. Formerly such a proceeding would have occasioned an acute attack which would have sent her to bed for several days. She is now an enthusiastic believer in the effectiveness of inoculation for hay fever, and her only regret is that she did not try the remedy sooner.

Reviewing these cases as a whole, it may be noted that while some improvement was admitted in all, in only one was there anything approaching to a cure, and that therefore the results were to some extent disappointing. Still if a cure—and the improvement in the last case recorded was so great and so well maintained that it may with some justice be claimed as a cure—can be obtained in 25 per cent of the cases treated, it seems well worth while to make trial of a remedy which can effect this result in a disease like hay fever, where many of the remedies hitherto recommended have proved notably uncertain and often inefficient. Both from the experience of others and from the directions sent out with the vaccine material, one gathers that the best chance of success is with a prolonged course of prophylactic inoculations administered during the winter and spring, and personally I have the feeling that, had this course been adopted in the cases of the first two patients of the above series, where the history of old-standing and severe asthma seemed to indicate a deeper-seated and more severe type of the disease than that revealed by inflammation of the conjunctiva or a running nose, the results might have been more decidedly satisfactory. I am in hopes that these patients may be induced to submit themselves to such a further course of inoculation in the ensuing winter or spring.

The only criticism that I would venture to raise in regard to the treatment—apart from its somewhat qualified results—is that it is somewhat tedious to the practitioner and rather expensive to the patient. The testing for the ophthalmo-reaction takes a considerable time, especially if the patient fails to react to the weaker dilutions of pollen, while it has to be followed by the preparation of the patient for the inoculation. The expense of the materials also is considerable, as the ophthalmo-reaction outfit which should be used to test the patient's susceptibility before each administration of vaccine costs about 12s., to which has to be added the cost of the bulb of vaccine at 2s. 9d. per bulb, or approximately 15s. for material for each treatment, so that if many inoculations are given the expense is considerable.

In practice it may be found fairly satisfactory to perform the ophthalmo-reaction test only on every alternate visit of the patient, or perhaps even on every third visit, thus curtailing the expense; but to ensure the best results it is recommended that the ophthalmo-reaction test should be applied before each administration of vaccine. The expense may also be sometimes reduced by buying capillary tubes of any one strength to replace those already used, these tubes of any one strength being supplied in packages of two tubes at 2s. 2d. per package. Still, even with those attempts to reduce the expense, it will be found in practice that a good many "outfits" are used—or the series of tubes in them broken—for each patient, which tends to place this form of treatment rather beyond the reach of patients of humble means.

Obituary.

MATTHEW HAMILTON TAYLOR, M.D. GLASG., JOHNSTONE.

We regret to announce the death of Dr. M. H. Taylor, which took place at his residence in Johnstone on 3rd October. Dr. Taylor was a student of the University of Glasgow, where he took the degrees of M.B., C.M., with special commendation, in 1870, and that of M.D. in 1878. After acting for a time as assistant medical officer to the Metropolitan Asylums District Hospital, Hampstead, he settled in practice in Johnstone, where, for the long period of forty-two years, he was one of the prominent figures in the burgh. He was its oldest practitioner, and the respect and esteem in which he was universally held were not due alone to his professional ability, which brought him the trust and confidence of a large circle of patients, but also to the interest he took, and the active part which he played, in all its public affairs. He was the medical officer of health for Johnstone; he was at one time chairman of its School Board, and was always keenly concerned in its educational questions; and he was an ardent Volunteer, having for long held the rank of Surgeon-Lieutenant-Colonel in the 2nd Volunteer Battalion Argyll and Sutherland Highlanders, and retiring from it with the Volunteer Decoration. Dr. Taylor, who died after a brief illness, was in his seventy-first year, and is survived by his wife and family. Two of his sons, Mr. M. Logan Taylor, M.B., and Mr. R. Scott Taylor, M.B., are well-known members of the medical profession.

DONALD MACAULAY, M.B., C.M. GLASG., PARTICK.

We regret to announce the death of Mr. Donald Macaulay, which occurred on 10th October. Mr. Macaulay, who studied medicine in Glasgow University, took the degrees of M.B., C.M. in 1875, and thereafter settled in Partick, where for many years he devoted himself to the practice of his profession.

CURRENT TOPICS.

Appointments.—The following appointments have recently been made:—

J. Kerr, M.B., Ch.B.Glasg. (1904), to be Honorary Assistant Surgeon to the Ashton Infirmary.

G. Richmond, M.B., Ch.B.Glasg. (1903), to be Medical Officer of Workhouse and Medical Superintendent of Infirmary of Ashton-under-Lyne Union.

Royal Navy (2nd October): Temporary Surgeon D. M'Alpine, M.B., Ch.B.Glasg. (1913), to *Victory*, additional for Haslar Hospital, to date 4th October.

6th October: Temporary Surgeon A. B. Hamilton, M.B., Ch.B. Glasg. (1910), to *Vivid*, additional for Plymouth Hospital, to date 11th October.

8th October: Temporary Surgeon D. K. Adams, M.B., Ch.B. Glasg. (1913), to *Imperieuse.*

Royal Army Medical Corps (20th September): To be temporary Captains—Temporary Lieutenants J. Fairley, M.D.Glasg. (M.B., 1905); J. F. Barr, M.B., C.M.Glasg. (1891); A. Lundie, M.B.Ed. (Cathcart); L. T. Stewart, M.B., Ch.B.Glasg. (1912); M. White, M.B., Ch.B.Glasg. (1913); R. F. Young, M.B.Cantab. (Glasgow). To be temporary Lieutenants—J. W. W. Hewitt, M.B., Ch.B.Glasg. (1914); D. C. Maclachlan, M.B., Ch.B.Glasg. (1907); W. F. Shanks, M.B., Ch.B.Glasg. (1915), B.Sc.; J. Dickie, M.B., Ch.B.Glasg. (1912); D. M'Kail, M.D.Glasg. (M.B., 1897); G. R. Spence, M.B., Ch.B.Glasg. (1910); D. Ferguson, M.B., Ch.B. Glasg. (1914); A. W. Cassie, M.B.Aberd. (Ibrox); W. A. Stuart, M.B., Ch.B. Glasg. (1905); R. V. Howell, M.B., Ch.B. Glasg. (1905); J. K. Morton, M.B., C.M.Glasg. (1887).

23rd September: To be temporary Lieutenant—J. C. T. Teggart, M.B., Ch.B.Glasg. (1912).

26th September: To be temporary Lieutenants—C. G. A.

Chislett, M.B., Ch.B.Glasg. (1906); T. B. Riddell, M.B., C.M. Glasg. (1898); J. Donald, M.D.Glasg.

1st October: To be temporary Captains—Temporary Lieutenants J. C. Dick, M.B., Ch.B.Glasg. (1909); D. M. Hunter, M.B., Ch.B.Glasg. (1913); J. Mowat, M.B., Ch.B.Glasg. (1911). To be temporary Lieutenants—S. Bryson, M.B., Ch.B.Glasg. (1915); J. M. Anderson, M.B., Ch.B.Glasg. (1906); A. Turnbull, M.B., Ch.B.Glasg. (1909).

2nd October: To be temporary Lieutenants—W. E. G. Beard, M.B., Ch.B.Glasg. (1911); M. I. T. Cassidy, M.B., Ch.B.Glasg. (1909).

4th October: To be temporary Captains—Temporary Lieutenants G. D. M'Lean, M.B., Ch.B.Glasg. (1912); D. Macintyre, M.B., Ch.B.Glasg. (1914); R. C. Robertson, M.B., Ch.B.Glasg. (1909).

8th October: To be temporary Lieutenant—W. E. A. Buchanan, M.B., Ch.B.Glasg. (1915).

12th October: To be temporary Captains—Temporary Lieutenants D. Y. Buchanan, M.B., Ch.B.Glasg. (1909); M. M. Rodger, M.D.Glasg. (M.B., 1907); A. Currie, M.B., Ch.B.Glasg. (1901); A. Lindsay, M.B., Ch.B.Glasg. (1913); H. F. Warwick; M.B., Ch.B.Glasg. (1904); K. C. Middlemiss, M.B., Ch.B.Glasg. (1908); J. L. R. Philip, M.B., Ch.B.Glasg. (1913).

14th October: To be temporary Lieutenants—A. G. Faulds, M.B., C.M.Glasg. (1888); A. G. Bissett, M.B., Ch.B.Glasg. (1903); N. M'Farlane, M.B., Ch.B.Glasg. (1911); H. M. Robertson, M.B., Ch.B.Glasg. (1883); J. Gardner, M.B., C.M.Glasg. (1896).

R.A.M.C., Territorial Force (27th September): Lowland Divisional Sanitary Section—Lieutenant T. J. Mackie, M.B., Ch.B.Glasg. (1910), to be Captain.

1st October: Highland Field Ambulance—Lieutenant J. Strathearn, M.D.Glasg. (M.B., 1901), F.R.C.S.E., to be Captain.

4th October: Lowland Field Ambulance—The undermentioned Lieutenants to be Captains:—A. D. Downes, M.B., Ch.B.Glasg. (1908); W. C. Gunn, M.D.Glasg. (M.B., 1907); R. S. Taylor, M.B., Ch.B.Glasg. (1907); A. W. Sutherland, M.B., Ch.B.Glasg. (1903); G. B. Eadie, M.D.Glasg. (M.B., 1901); P. J. Moir, M.B., Ch.B.Glasg. (1914); W. H. Manson, M.D.Glasg. (M.B., 1906); J. W. Burton, M.B., Ch.B.Glasg. (1912). To be Lieutenant—W. Combe, M.B., Ch.B.Glasg. (1915), B.Sc.

University of Glasgow: Graduation in Medicine.—At the autumn graduation in medicine, which took place on 11th October, twenty-four graduands, of whom four were ladies, were admitted to the ranks of the profession. The number was unusually small on account of the circumstance that many members of the year had taken their degrees at the special graduation ceremony held at the close of the summer session.

Principal Sir Donald MacAlister presided, and at the close of the proceedings addressed the graduates and students upon their duty in the present crisis. He said that to those of them who had approved themselves to be qualified surgeons, and were now entering the King's service at this time, he wished God-speed in the name of the University. He knew how urgent was the call for good officers in the medical service, and he knew that the best were not too good for the work that had to be done. They were proud that they had promptly answered the call. By that response they had already given an earnest of their quality. They believed that it would stand the test, the searching test, of practice in the field. Their example would reinforce the call the country was making to their fellow-students in their own and other Faculties. Many of them were striving to fit themselves for a share in the high trust now committed to them, that they might share also in the honour that was rightly paid to spontaneous patriotic service. Some he knew were almost impatient at times of the training and testing that were the necessary guarantees of their efficiency. But their time would come soon, and meanwhile they must be content with the assurance that, in the opinion of the supreme authority, they also were serving the country who were strenuously preparing themselves for its medical service. In the commissioned ranks of that service there was no place for the unskilled; and it was in the commissioned ranks that more and more fit men were required. For some of the new armies already in being the full complement of young surgeons had still to be found. Every qualified man of the right sort, who could be spared from civil duty or turned out as a trained surgeon by the schools, would be wanted, and wanted soon. That was the message he had received from the War Office, and he commended it to all students of medicine who were nearing the end of their curriculum. What they had still to learn in practical medicine and surgery was the most immediately important of all their studies. Any relaxation of diligence or discipline, which impaired their knowledge of these subjects and delayed their qualification, amounted to a failure in their duty to the nation. They could no longer regard it as a matter that concerned themselves alone. It had wider and more perilous issues than any that were merely personal. The conscience of the student-body would, he knew, be keenly sensitive to the responsibility thus laid upon it by the country's danger; and he was persuaded that the students of this critical year would not be found wanting in the qualities of loyalty and earnestness that had characterised those whom the University had sent, and was now sending, to the country's succour. They began the session with a diminished staff and depleted resources; but, notwithstanding all, they were determined to carry on with energy the indispensable work of "preparation for service." That was the special function assigned to them by the nation in this crisis. It would not be easy work for any of them—it would certainly be anxious work—but with good courage and good-will on the part of all, teachers and students alike, it could be accomplished; and he believed it could be accomplished in such wise that the second year of the great war would be marked hereafter as a great year in the University's history.

The following is a list of the graduates in medicine, many of whom have already obtained commissions in the Royal Navy or the Royal Army Medical Corps:—

BACHELORS OF MEDICINE AND BACHELORS OF SURGERY (M.B., Ch.B.)

I. With Commendation.

Noah Morris, B.Sc.
Robert Taylor Todd.

II. Ordinary Degrees.

Robert Aitken.
George del Pino.
Alexander Dick.
Ronald Stevenson Dickie.
Leonard Woodburn Gemmell.
Norman William Gilchrist.
Robert Kinnear Hay Gillespie.
William Allan Higgins, M.A.
Theodore Paton Hutchison.
Florence Scott Kirk.
Hugh Lawrence M'Cormick.
Donald John MacDougall.
Gerald James M'Gorty.
Joseph Patrick M'Greehin.
Archibald M'Innes.
Margaret Jane Maclachlan.

II. Ordinary Degrees (*continued*).

Effie Cowan M'Vie.
John Hughes Murray.
Arthur William Panton.
Kenneth M'Alpin Ross.
Margaret Ann Hendry Stewart.
George Turnbull Walker.

Mr. John Mandeville Macfie, M.B., Ch.B., who took his degrees at the summer graduation, has gained the Brunton Memorial Prize of £10, awarded to the most distinguished graduate in medicine of the year.

Mr. Noah Morris, B.Sc., passed with distinction in midwifery.

Royal Faculty of Physicians and Surgeons.—At the monthly meeting of Faculty, on 4th October, John Forbes Webster, L.R.C.P., L.R.C.S.Ed., L.R.F.P.S., L.D.S.Glasg., 19 Newton Place, Glasgow, was admitted (after examination) as a Fellow of Faculty, *qua* surgeon, qualified to hold office.

Licence in Dental Surgery: At the recent examinations for the Licence in Dental Surgery of the Royal Faculty of Physicians and Surgeons, Glasgow, the following candidates passed the final examination, and were admitted as Licentiates in Dental Surgery:—Andrew Allan Dewar, Shawlands; Arthur Renwick Lambie, Aberdeen; Reginald Henri Levy, Glasgow; John Herbert M'Laughlin, Hamilton; James Maxwell, Glasgow; Gwilym Jones Roberts, Blaenau, Festiniog, N.W.; Alexander Gardner Taylor, Jun., Glasgow; James Sanderson Vogwell, Bournemouth; Cyril Valentine Walker, Darlington; James Aitken Wylie, Scotstounhill.

Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow.—The following candidates having passed the requisite examinations of the above Board on 2nd October, 1915, were admitted Diplomates in Public Health:—Mary Agnes Beausang Murphy, M.B., B.Ch. Irel., Mansfield, Notts.; James Crocket, M.D.Edin., Bridge of Weir; Wilfrid Samuel Hamilton Campbell, M.B., Ch.B.Edin., Edinburgh; John Carstairs Drysdale, M.B., Ch.B.Edin., Edinburgh; Kenneth Alexander Maclean, M.B., Ch.B.Edin., Edinburgh.

Retirement of Professor Ferguson.—In the following letter addressed to Principal Sir Donald MacAlister, Professor John Ferguson intimates his resignation of the Chair of Chemistry at Glasgow University:—

13 Newton Place,
Glasgow, *September* 10, 1915.

My dear Principal,—When the examinations at the close of the month are over I shall have completed my forty-first year as professor. To this period may be added five and a half years of previous professorial duty in lectures and examinations, and before them four years of assistant's and demonstrator's work. My undergraduate career began in the session 1855-56, and it was followed by post-graduate courses not usually taken at that time.

I have enjoyed, therefore, an unbroken connection with the University of sixty years, fifty of which I have passed as a teacher in one capacity or another. If it had been possible I should have gladly continued for a little time longer, but when I consider what my physician has urged, and what I myself am aware of, I think I must rest content with what I have been permitted to accomplish.

So I ask now to be relieved of the duties and responsibility of the position which I have had the honour and privilege of occupying so long.

I hope, however, that my intercourse with the University will not end here, but that my lifelong connection with it will continue, and that I may even yet have an opportunity of sharing in its labours.—Believe me, My dear Principal, Very faithfully yours,

John Ferguson.

The resignation has been accepted by the University Court, before whom it was laid by the Principal at their meeting on 7th October.

Professor Ferguson lays in his letter a very natural emphasis upon the length of his connection with the University. He owes to it the unique position which he holds as the last remaining link between the teaching staffs of the Old College in the High Street and the new College at Gilmorehill. In the Old College he was both student and teacher, for though not as yet professor, he assisted his predecessor, Professor Thomas Anderson, from 1867 to 1874. His memory is thus charged with recollections of an earlier Glasgow, of a smaller town that yet was the parent or the nurse of many of the great men who have been his contemporaries and his colleagues, and in him as in no one else there are preserved the traditions of the life of a university growing from generation to generation with the same purpose and with wider powers. But he makes no reference to his researches, pursued throughout his long tenure of the Chair of Chemistry, into the history of chemistry and alchemy—researches which have made his name familiar in that branch of his subject far beyond the limits of his country. It is by these that he will be remembered among chemists. The long succession of medical and scientific students whom he has taught will think of him as one to whom they owed their earliest introduction to the principles of science, as a man imperturbable and essentially kindly, yet with a flash of satire leading many a vainglorious youth to a speedy self-revaluation, as in all things a cultured gentleman; and they will unite in wishing him in his well-earned retirement happiness and length of days.

Dr. Alexander Duncan and the Royal Faculty of Physicians and Surgeons.—On 12th August, 1915, Dr. Alexander Duncan completed his fiftieth year of service to the Royal Faculty of Physicians and Surgeons in the capacity of secretary and librarian. A record of service so exceptional in its length, in its faithfulness, and in its efficiency, could not, it was felt, receive the tribute merely of a passing mention, and at the monthly meeting of Faculty, held on 4th October, the president proposed and Dr. Robert Perry seconded a resolution expressing the gratitude and appreciation of the Fellows for Dr. Duncan's unremitting labours. In moving the resolution, Dr. Barlow said:—

"At a recent meeting of the Council we were reminded by Dr. Knox that our secretary had completed fifty years of service, and I was asked to make some reference to this important and interesting event at our meeting to-day. The qualifying term 'suitable' has been introduced into the billet by our assistant secretary, and if I fail in this respect I hope you will attribute the failure, not to half-heartedness or lack of sincerity, but to my inability to find language in which to clothe my thoughts and to voice your feelings.

"Our friend is now in his 84th year, but has vigour more than sufficient to bring him to this Hall frequently, and to watch over our work and interests. He carries himself as erect and alert as ever, and this may be in part attributable to the training of his schoolboy days. He was born at Muckart, and had to travel daily to the Dollar Academy, a distance of five miles. The inhabitants of Fife, we are told, and more especially those about Rumbling Bridge, are very indifferent to matters of time, and it is easy to understand that in this district circumstances would arise which would delay the departure of the scholar and his arrival at the Academy. Our secretary even now tells with pride of the times when he used to travel the five miles at a running pace, and thereby arrived at school at the appointed time.

"Dr. Duncan began his work as secretary and librarian on 12th August, 1865, and we are not surprised to hear from the Fellows of that time that he at once captured the goodwill and esteem of the Fellows, which he has retained in increasing measure to the present day.

"We all know how efficiently during these years Dr. Duncan has done his work as secretary. For ten years I have personal knowledge of the way in which he has recorded the proceedings of the Council—the letters of explanation, of remonstrance, and of congratulation which he has written at our request—and of the confidence and trust reposed in him.

"We all recognise the work involved in the production of that most interesting book, *Memorials of the Faculty*, which our friend published in 1896. Personally I am most impressed by his enormous and unstinted devotion to the work of the Faculty involved in the re-arrangement of our library, and the publication of our catalogue—the first volume in 1885, the second in 1901. This work surely made Dr. Duncan familiar with the contents of all our books. In the eighties and early nineties I had frequent occasion to ask him for information regarding regulations, examinations, or to ask where I could get information on physiological or surgical subjects. One left these interviews impressed by the extent of Dr. Duncan's knowledge, and by his delight at having been able to help.

"Although it is true that the Faculty has always appreciated the work of our secretary and librarian, and has, according to its financial ability, granted by unanimous votes increases in his salary, it is still more true that he has been attached to us by bonds more close and more satisfying than those which money provides.

"Nevertheless the Fellows have done something. In 1902 they subscribed for the presentation of the portrait in oils which hangs in our front hall, and for a replica of it which was given to our friend. The arrangements were in the hands of an executive committee, five in number, of whom three survive—Sir Hector Cameron, Sir David M'Vail, and Professor Glaister. I can well imagine the delight of the committee with the immediate and hearty response to their appeal for funds. No one who was present at the annual dinner on 5th December, 1902, can ever forget the speech of Dr. J. Lindsay Steven, who presented the portrait to the Faculty. His was surely a 'suitable reference' to the work of our secretary, so 'suitable' as to make me certain of one thing—my own incapacity on the present occasion to follow worthily in his steps.

"In June, 1907, Mr. Hurst was appointed assistant secretary with two objects. The first and most important was to lessen Dr. Duncan's work; the second, the hope and expectation that so apt a pupil working under such a master might become interested in the work of the Royal Faculty. Our hopes have been realised, for Dr. Duncan has captured not only the Fellows, he has captured Mr. Hurst, who has, to my knowledge, in recent years shown to his teacher and guide a devotion which we sometimes see exhibited by a son to his father.

"In concluding this reference I wish to quote two sentences from Dr. J. Lindsay Steven's address given on the occasion to which I have referred. After referring to Dr. Duncan's work as secretary, librarian, and historian of the Faculty, Dr. Steven continued:—'For these reasons, then, the subscribers thought that the time had fully come for adding the portrait of our secretary to the walls of the Faculty Hall, but not for these reasons only. They also desired in this manner to give visible expression to their affection for one who, by his true nobility of character, by the uprightness and integrity of his whole life, and by his faithful friendship, has been an inspiring and an enobling example to us all.'

"If I have correctly judged of your feelings you will support the resolution which I have now the honour to move. Before doing so I may remind you that when Dr. Duncan's portrait was presented there were twelve gentlemen whose names appeared on our Roll of Fellows prior to our secretary's beginning his duties. At the present time only one remains, the name of Dr. Robert Perry, who is with us to-day, and will, I trust, second the resolution."

The resolution, which was ably and cordially seconded by Dr. Robert Perry, the oldest Fellow of Faculty, and was unanimously approved, was in the following terms:—

"The Fellows of the Royal Faculty of Physicians and Surgeons of Glasgow, in meeting assembled, resolve to place on record their sincere appreciation of the services of Alexander Duncan, B.A., LL.D. For over fifty years Dr. Duncan has been a faithful secretary and librarian, devoting himself unsparingly to the onerous duties of his office, a trusted and sagacious adviser in matters of difficulty, and the true helper and friend of all the Fellows. That he may be long spared to come among us, free from pain and sorrow, is the heartfelt wish of all the Fellows of the Royal Faculty."

Instructions were given that a copy of the resolution be sent to Dr. Duncan.

SCOTTISH INSURANCE COMMISSION: OPPOSITION TO UNIFICATION.—At a meeting of Glasgow Burgh Insurance Committee, held on 13th October, in the Trades' Hall, Glassford Street—Mr. R. D. M'Ewan presiding—Mr. John Brown submitted a resolution opposing the proposal to incorporate the Scottish National Health Insurance Commission with a central unified Commission having headquarters in London. It was set forth in the resolution that the proposed readjustment would inevitably seriously impair the admittedly sound, efficient, and satisfactory administration by the Scottish Commission of the Acts in Scotland, in intelligent accordance with distinctly Scottish conditions, and thereby create administrative difficulties and disadvantages which would more than discount any problematical gain from the financial retrenchment contemplated. Mr. Brown said that if there was only one Commission any economy effected would be more than lost by the amount of expense that approved societies would be put to in going to the Commissioners in London.

Mr. David Fortune seconded.

Dr. Charles E. Robertson proposed as an amendment that the words "admittedly sound, efficient, and satisfactory" should be omitted from the resolution.

There was no seconder to the amendment, and the resolution was adopted.

ENZYMOL AND THE ENEMY.—Our attention has been directed by Messrs. Fairchild Brothers & Foster to the following article, which appeared in the *Lancet* of 18th September:—

"*Gangrenous wounds treated with artificial gastric juice.*—In an analytical column in our issue of 1st May we referred to a preparation called 'enzymol' which showed great proteolytic activity, and this is the reason why its application to gangrenous wounds facilitates the removal of septic matter by irrigation. Messrs. Fairchild Brothers & Foster, of Albert Chambers, 64-65 Holborn Viaduct, London, E.C., the makers of 'enzymol,' have drawn our attention to an article which appeared in a German medical journal in which the writer describes his experience in the field treating gangrenous wounds with artificial gastric juice, implying novelty in the method. Messrs. Fairchild point out that if gastric juice as a surgical solvent is to be called by anybody's name it ought to be that of 'Fairchild,' as they were the first to prepare a juice for this express purpose. Enzymol has been in use for twenty years, while the German product is of quite recent origin."

As our antagonists believe that everything either beautiful or useful is necessarily German, it is no matter for wonder that, having found it useful, they should attempt to Teutonise enzymol. But their doing so is evidence that in their opinion the preparation is of value, and hence their action may be regarded as a disguised testimonial to Messrs. Fairchild, who it is to be hoped may be repaid for the attempted robbery by a wider use of their preparation in this country.

MEDICAL STUDENTS AS COMBATANTS.—In the Scottish Command Orders of 1st October it is notified that medical students who are in the fourth or fifth year of their medical studentship who are desirous of resuming their professional studies may, if officers, be allowed to resign their commissions, and, if of other ranks, be discharged for that purpose.

EYESIGHT TEST MODIFIED.—Captain Ross, of the Army Recruiting Office in Bath Street, directs attention to the fact that the eyesight test for recruits for Kitchener's army has been considerably modified. Formerly the test was similar to that adopted for the regular army, and the experience since the Kitchener's armies were raised has been that a good proportion of the men presenting themselves at the recruiting offices of the country were not able to fulfil the standard requirements. The test has now been made considerably easier, and it is hoped that many men who had to be rejected on the former standard will again present themselves for examination. The modified test, of course, applies only to recruits for the period of the war.

SCOTTISH COMMAND ORDERS: MEDICAL DEPÔTS, AND DENTAL TREATMENT IN GLASGOW.—The following regulations for medical depôts and for dental treatment in Glasgow were published in the Scottish Command Orders of 11th and 13th October respectively:—

Medical Depôts.—The large and increasing number of infantry soldiers who have been invalided from expeditionary forces, and in many cases remain for lengthened periods unfit to return to the front, necessitates special arrangements for their administration and for suitable medical treatment to ensure that they may become fit as quickly as possible. For this purpose command depôts will be formed in each command for the reception of regular infantry soldiers. The establishment of the permanent cadre of each command depôt will be found as far as possible from officers, warrant officers, and non-commissioned officers who have been invalided from expeditionary forces, and are now permanently unfit for service overseas. In addition to the administrative establishment, a medical staff will be appointed by the War Office to each command depôt as required to carry out the special medical treatment. The medical personnel attached will be one officer in charge, two temporary lieutenants, six civilian medical practitioners, forty masseurs, and forty-eight home hospital reserves.

Dental treatment in Glasgow.—It is published for the information of all concerned that arrangements have been completed for all the dental treatment of soldiers in the Glasgow area and district being carried out at the undermentioned stations:—Nos. 3 and 4 Scottish General Hospitals, Stobhill; the Dental Hospital, 15 Dalhousie Street, Glasgow; and the Scottish Dentists' Association (Limited), registered office, 54 Gordon Street. At the following clinics:—181 Crown Street, South Side; 1 Cranston Place, Anderston; and 8 Castle Street, Hamilton. Dental treatment at Stations 1 and 2 will continue to be carried out as heretofore. With regard to Station 3, the following details are published:—A list of practitioners is now published, and will be revised and added to from time to time. The secretary is Mr. Charles Jenner Lachlan, solicitor, 54 Gordon Street. Medical officers in charge of troops will communicate with the secretary, and will make the necessary arrangements in conjunction with commanding officers for the sending of soldiers to have estimates given and subsequent treatment carried out at the clinics, in accordance with Command Orders. The clinics will be open daily, except on Sundays, from 5 to 7 P.M., and other hours which may be arranged if necessary. Existing estimates on unfinished work prior to this Order are to be completed on the previous system.

GLASGOW MEDICAL CASUALTIES.—Many casualties among Glasgow medical students and among the sons of medical men in Glasgow and its neighbourhood fall to be recorded this month. Most of them occurred during the desperate fighting which attended our recent advance on Hulluch and Loos.

Lieutenant Marshall T. Allan, 6th Service Battalion Royal Scots Fusiliers, killed in action in France, 25th-26th September, was the son of the late Dr. George R. Allan, Glasgow, and grandson of the late Dr. G. M. Thomson, of Jerviston House, near Motherwell He was a medical student at Glasgow University, and served four years in the Officers' Training Corps—two in the infantry and two in the engineers. He received his commission as second lieutenant on the outbreak of war, and left for France in the spring. He was selected as bomb officer to his battalion, and was promoted first lieutenant about six weeks ago. He played for the University football, cricket, and hockey teams. Lieutenant Allan was 26 years of age.

Second Lieutenant John Jamieson Carswell, 10th Scottish Rifles (Cameronians), killed in action in France, 25th or 27th September, was the younger son of Dr. John Carswell, Commissioner of the General Board of Control. He was an architect, and had studied in the Glasgow School of Art and the Royal Technical College. He joined the Glasgow Highlanders as a private over a year ago, and received his commission in November. Lieutenant Carswell, who was 26 years of age, had been in France since July.

Lieutenant Harold Arthur Cruickshank, 3rd Royal Scots Fusiliers, who died of wounds received in action in France, was 23 years of age, and the only son of the late Mr. William Cruickshank, formerly of Aberdeen. He was born in South Africa, but received his early education at Robert Gordon's College, Aberdeen. He was afterwards a medical student at Glasgow University, and received a commission after the war broke out.

Captain George Melven Harley, 12th Highland Light Infantry, killed in action in France on 25th September, was 23 years of age. He received his early training in the Officers' Training Corps (Glasgow University). Three years ago he passed into the special reserve of officers, being gazetted second lieutenant and attached to the 2nd H.L.I. On the outbreak of the war he, with some others, was retained to help with the training of some of the new service battalions. He was attached successively to the 10th, 11th, and finally the 12th Battalion H.L.I., and was gazetted captain in March this year. He was a student of Anderson's Medical College and Glasgow University, and was in the final year of his medical and dental course. He was a keen Rugby player, and played for Hillhead High School.

Second Lieutenant William Gray Herbertson, 8th King's Own Scottish Borderers, killed in action in France on 28th September, was the son of Dr. Herbertson, Johnstone. Before the war he was in business in London. At the outbreak of war he joined Lochiel's Camerons as a private, and four months ago he received his commission in the K.O.S.B. Three months ago he went to France, where he became regimental bomb officer and a brigade instructor, and proved himself most efficient. Lieutenant Herbertson, who was 25 years of age, in his last action was left in command of his company, and was well maintaining his position when he fell.

Lieutenant F. J. G. Rolland, 6th King's Own Scottish Borderers, killed in action on 25th September, was a son of Bailie William Rolland, Paisley. He was at first reported missing, and when last seen at the head of his company, which had suffered badly, he was signalling for reinforcements. Lieutenant Rolland was a member of the Glasgow University Officers' Training Corps, and obtained a commission as second lieutenant in the 8th K.O.S.B. in September last year. In June he was gazetted lieutenant, and subsequently went to the front with the 6th K.O.S.B. He was a graduate in Arts of Glasgow University and was a medical student when the war began. He formerly played in the first fifteen of the Glasgow Academy Football Club. Two other sons of Bailie Rolland are also serving in the Army, Lieutenant Wm. Rolland, M.D. Glasg., with the R.A.M.C., and Lance-Corporal Chas. D. Rolland with the 17th H.L.I.

Lieutenant A. Stenhouse, 10th Scottish Rifles (Cameronians), has died of wounds received in the recent fighting in France, 25th-27th September. Mr. Stenhouse was a medical student in his final year, and an enthusiastic member of the Glasgow University Officers' Training Corps, whose A certificate he held. He received his commission as second lieutenant in September, 1914, was promoted to a lieutenancy in June, 1915, and was chosen as bomb instructor to the battalion. He had been in France since July.

Lieutenant John Frew, 7th Battalion King's Own Scottish Borderers, has been wounded by shrapnel in France, and is now in hospital at Versailles. Lieutenant Frew, who is 19 years of age, was a medical student at Glasgow University when war broke out, and was attached to the Officers' Training Corps.

Second Lieutenant Patrick M'Diarmid, 6th Cameron Highlanders, wounded in France by shrapnel on the left knee, was in his final year as a medical student at Glasgow University. He joined the Camerons as a private last October, and after receiving his commission in May was for a period in training at Trinity College, Oxford. He went to the front in July.

Lieutenant James M. Mackintosh, 6th Cameron Highlanders, wounded in action in France between 25th and 27th September, is at present in hospital in London, suffering from bullet wounds on the left shoulder, face, and neck. Lieutenant Mackintosh is an M.A. of Glasgow University, and a medical student. He was a sergeant in the Royal Army Medical Corps up till last Christmas, when he was offered a commission in the Cameron Highlanders, which he accepted, and he left for France in the beginning of July. He had been for several years in the Officers' Training Corps, and he was president of the Glasgow University Liberal Club for the year 1913-1914.

Lieutenant-Colonel S. M. Sloan, 1st Scottish Horse Ambulance Brigade, who recently went out to the Dardanelles with his regiment, has been invalided home suffering from an attack of dysentery. Lieutenant-Colonel Sloan is a son of Dr. Samuel Sloan, Glasgow, and before the war was in practice in Dunblane.

Opening of Scottish National Red Cross Hospital.—The opening of the building recently brought to completion in Bellahouston Park, Glasgow, through the liberality of contributors from all parts of Scotland and from overseas, marks an event in the history of the Scottish Branch of the Red Cross Society. The Branch undertook the construction of the hospital in response to an appeal from headquarters to concentrate the available resources in personnel upon large military hospitals near cities which possess a medical school, and with the full cognisance and approval of the Director-General of the Army Medical Service. They were confident that, so soon as the need for providing another large first-line military hospital was clearly understood, their appeal for financial support would be favourably received; and their confidence has been fully justified by the result.

The hospital, which may be regarded as a Scottish national contribution to the needs of the army, is of the pavilion or hutted type. It is not a permanent structure, its life being estimated at somewhere over twenty years; but it is sufficiently durable to serve all the purposes of the war, and to be adaptable, after the establishment even of a distant peace, to the uses of civil life. Its site is eminently suitable, as it is freely exposed to fresh air and sunlight, and is within easy access of the principal railway termini. The buildings rest on brick foundations, and the walls are constructed of deal framing, covered externally and internally with asbestos sheets. The roofs are of rough boarding, covered with Blackwall's roofing felt. Near the entrance from Paisley Road is the receiving block, flanked on the one side by the administration section, the nurses' and doctors' quarters, and the operating theatre, while on the other side are the pathological block, stores, orderlies' quarters, soldiers' recreation and dining-room, kitchen, and boiler-house. The ground to the south of these buildings is occupied by the seven ward blocks. The arrangements generally are designed to facilitate the easy and speedy transfer of patients from the ambulances to the wards. The receiving block, which possesses a belfry and clock tower, is composed of an inquiry office, disrobing-room, receiving-room, bath-house, and dressing-room.

Each hospital ward block is divided into two wards with separate administration, a wide continuous gangway running through the centre. There are fifty beds in each ward, and also two additional apartments for special cases. The usual accessory accommodation, such as a fully equipped ward kitchen, orderly's cleaning-room, linen store, and sister's duty-room are provided, besides a sanitary annexe with two bathrooms and lavatories. These annexes are cut off from the ward by passages to allow through ventilation. The operating theatre is built on the most modern lines, and, considering its size, is one of the most up-to-date buildings of the kind. The walls and ceilings are furnished with special hard granite plaster and enamelled, and the floors are covered with Doloment jointless flooring, having cove skirting. The windows are specially designed to allow a plentiful supply of fresh air. The theatre, which has accommodation for two operating tables, is provided with a rooflight and a front light. In the same building are a Roentgen-room, anæsthetic-room, developing-room, sterilising-room, an instrument-room, and other necessary accommodation. Equally well equipped is the pathological block, which includes an electrical department, rooms for incubation, clinical, pathological, and sterilising work, besides a mortuary, *post-mortem* room and chapel. The administration block is divided into offices for the commanding officer, the registrar and his clerks, the matron, the quarter-master and the sergeant-major, and a post office.

The building set apart for the nurses—of whom there will be 110—contains reading, dining, recreation, writing rooms. In another block suitable accommodation is provided for the staff of doctors and students. The facilities for the cooking and serving of meals are of the most approved type. Besides the small kitchens attached to each of the wards there is a large kitchen and servery block, well lighted and ventilated, and thoroughly equipped with the best cooking appliances. The servery is arranged so as to provide ample accommodation for the leading up of the dinner waggons for the various wards. In addition to the blocks named, there are buildings for supply stores, orderlies' day and night quarters, patients' recreation and dining hall, and quarters for sick nurses.

The whole of the buildings have been simply and yet tastefully decorated, and nothing has been left undone to ensure the comfort of the patients. Electric light has been installed, and the buildings are heated from a central heating station with low-pressure steam. The hospital has been constructed to the designs of Mr. C. F. Skipper, Cambridge, who has designed several similar buildings for use during the war, among those erected being one at Cambridge with 1,520 beds, and the Canadian Red Cross Hospital at Taplow with 900 beds. Mr. Skipper was recently commissioned by the Ontario Government of Canada to erect the largest hospital of a temporary nature that has yet been planned since the outbreak of war.

The hospital was formally opened on 15th October by the Duchess of Montrose in presence of a large company. Sir George T. Beatson, K.C.B., chairman of the Scottish Branch of the Red Cross, presided, and he was accompanied on the platform by the Duchess of Montrose, the Countess of Eglinton, the Marquis of Graham, Lord Inverclyde, Sir Thomas Glen-Coats, Bart.; General Bourke, D.D.M.S. (Scottish Command); the Bishop of Glasgow, Sir Samuel Chisholm, Bart., and Lady

Chisholm, Bailie Mason, Mr. J. D. Hedderwick, LL.D.; Mr. Hugh Reid, Mr. William George Black, LL.D.; Mr. Baird Smith, Mr. J. Inglis Ker, and others.

The Chairman said that one of the duties of the Red Cross Society was to provide any additional hospitals that the military authorities might require to help them in their work. Scotland had responded very well to the appeal for such accommodation. Glasgow had contributed 1,200 beds (500 at Springburn and Woodside and 700 at Bellahouston), and the counties of Scotland had contributed nearly 4,000. He desired to emphasise that they were met to express approval of work that Scotland as a whole had done, work of which Scotland might justly be proud. They had been fortunate in having as chairman of the Construction Committee of the hospital Mr. Hugh Reid, who had not only given the benefit of his valued knowledge and experience in business affairs, but had also devoted a great deal of personal attention and private generosity to the scheme.

Mr. Hugh Reid, at the request of the Chairman, referred to the main features of the buildings. They were indebted, he said, to the Corporation for the site, of which they had utilised nearly 15 acres. Most of all, they were indebted to the people of Scotland, who had contributed so handsomely towards the hospital. He was gratified to be able to announce that the hospital had been completed within the estimate of the cost that was expected at the beginning. Roughly, the buildings with all fittings had cost £39,000. Mr. Reid concluded by asking the Duchess of Montrose to accept as a souvenir of the opening ceremony an album of photographic views of the hospital.

The Duchess of Montrose said that at the present time when the military authorities were urgently asking for additional hospital accommodation to be provided for sick and wounded it was very satisfactory to know that that splendid large hospital was now ready for occupation. Sir Alfred Keogh, the Director-General of Medical Service, had written to say that he was very glad to hear that these 700 beds were now available, as he expected they might shortly be urgently needed, and many more besides. The hospital was admirably suited in every way for the purpose for which it had been built, and they rejoiced to think that the 700 patients who could be taken in there would have every advantage that an up-to-date hospital designed for the purpose could ensure, with plenty of fresh air and sunlight, in open surroundings. No ordinary building adapted and made into a hospital could give the same advantages. There were seven main blocks, divided into two wards, each ward containing 50 beds. Some of the blocks and wards had been generously given by different counties. Ayrshire and Renfrewshire had each given a block, Dumbartonshire and Fife had each given a ward, whilst Stirlingshire and Peeblesshire had contributed beds. Other beds had also been contributed by individual donors. In fact, subscriptions towards the hospital had been received from all parts of Scotland and from all classes of the community, also from distant parts of the Empire, from Honolulu, from South Africa, and Trinidad. The total thus generously given amounted to £51,000. This had enabled the War Executive of the Scottish Branch to establish the hospital without encroaching in any way on the general funds of the Society. Thus the entire funds expended on the erection and equipment of the institution had been specially given for the purpose by generous donors, who wished to provide our sick and wounded soldiers with the most up-to-date hospital that could be established. Nor should they look on the hospital as merely a temporary building for the period of the war. Hundreds of poor wounded men would need surgical treatment and nursing for many subsequent months after the war had ended, and even after that period had elapsed the hospital might be still further utilised as a sanatorium for consumption, or for some other equally excellent purpose. Thus this institution was likely to prove of the greatest service to the community for many years to come. That day they rejoiced to think how greatly the sick and wounded could be benefited there. Our soldiers and sailors had earned the enthusiastic admiration of the whole Empire by their splendid devotion to duty and self sacrifice, often under most trying circumstances. For these gallant men who in the service of their country had risked life and limb on the field of battle we could not do too much. The least we could do was by every means in our power to give them that which they would obtain there—the very best medical and surgical treatment and the most efficient nursing. They hoped, with God's blessing, that all the sick and wounded who would pass through that hospital, after receiving every care and attention there, might be restored to health and strength again. Her Grace concluded by declaring the hospital open.

Bailie Mason expressed regret that owing to a meeting of the Corporation the Lord Provost was unable to attend, and in name of the Lord Provost and Corporation conveyed their good wishes for the wellbeing and usefulness of the hospital. No finer service could be rendered, he said, than in helping the wounded.

General Bourke said it gave him great pleasure on behalf of the War Office and of the Army to accept the generous and magnificent gift of that hospital. They had now over 10,000 first-line beds in Scotland, and the most recent addition in completeness and efficiency would stand in the front rank of the Scottish hospitals. He thanked the Scottish Branch of the Red Cross Society and the people of Scotland for the magnificent response they had made to the pressing needs of the sick and wounded soldiers, and he trusted that that would not be regarded as a final effort of Red Cross activity, but rather as an inspiration to further efforts, as these would certainly be needed before the end of the war.

On the call of Lord Inverclyde a vote of thanks was awarded to the Duchess of Montrose for having declared the hospital open.

The Chairman, in intimating that the hospital would be open to the inspection of the guests, stated that a slight modification of the arrangements had been rendered necessary owing to the arrival at noon of 80 patients. They had been urged by the War Office to complete the equipment as soon as possible. Thanks largely to the splendid work of Volunteer Aid Detachments they had had everything in readiness for the first contingent of wounded. They were also indebted to the contractor, Mr. Guthrie, for the valuable services he had rendered.

RED CROSS SOCIETY: SCOTTISH BRANCH.—Since our last notice, published in September, the work of the Scottish Branch has continued to extend, and the flow of benefactions has increased to meet it. Early in August it was announced that the first list of subscriptions to the War Fund of the Branch from the members of the Scottish licensed trade amounted to £2,461, 7s. 3d., and that the subscriptions would be devoted to the motor ambulance fund. At the same time an appeal by Lady Eglinton for funds to provide comforts for the Ayrshire Territorials at the Dardanelles resulted in the collection of £525 from Ayrshire subscribers, who through the Ayrshire Clothes Depôt also contributed a generous supply of clothing to the Glasgow centre. An appeal was made by the Headquarters Clothing Committee for fly veils for the use of the hospitals in the Dardanelles, and for large quantities of bandages. It was intimated that the movement for the promotion of a Red Cross sale was meeting with every encouragement, and that the work of collecting and providing gifts for the sale had been taken up by the various counties. The presidents of the county branches of the Society had agreed to act on the Organising Committee, while Her Majesty Queen Alexandra had graciously expressed her willingness to act as patron of the sale.

A consignment of eight ambulances, which had been presented by the Branch to the French Red Cross some weeks previously, was acknowledged in a warm letter of thanks received from the secretary of the French society, who wrote of them as "solidly built, provided with every comfort, smooth running, and conducted by a highly competent body of drivers." They had, he said, rendered valuable assistance at the fighting line.

A flag day held on 7th August in Dunoon and district for the maintenance of a ward in Woodside Military Hospital realised the sum of £51, 3s. 2d. On 10th August it was stated that the War Office had decided to issue brassards and identity certificates to members of Voluntary Aid Detachments regularly in attendance on sick and wounded soldiers in recognised auxiliary hospitals affiliated to military hospitals. On the 12th it was intimated that the sum obtained to date from Red Cross collecting boxes in Scotland was £2,516, and that the boxes placed on the Glasgow tramway cars had made a promising beginning, having collected £50 to endow a bed in the Scottish National Red Cross Hospital in a very short time. It was also announced that Mr. Alexander Whitelaw had given over to the Society the mansion house of Gartshore, Kirkintilloch, to be used as a hospital for wounded soldiers. The hospital was to have accommodation for 150 beds, and was to be under the management of the local corps of the Women's Voluntary Aid Detachment, while several members of the Kirkintilloch Ambulance Corps had volunteered as orderlies.

With the opening of the shooting season the branch received large gifts of game for distribution among the various institutions.

Additional subscriptions were intimated in the middle of the month—from the staff at the head office of the Commercial Bank of Scotland, sufficient to name a bed in the Scottish Hospital at Rouen; from the Scottish residents in Pretoria, by the hands of Mr. William Miller, of the Caledonian Society of that city, £100 to name two beds in the Scottish National Red Cross Hospital; from the Church of Scotland Minister and Manse Motor Ambulance Fund for the purchase of a motor ambulance, a sum of £511, 17s. 2d.

On the 19th a statement was issued relative to the year's work in the supply of medical equipment, clothing, and comforts to hospitals at home and abroad. The extent of the work may be gauged from the following details of the garments, &c., sent for the use of our own sick and wounded soldiers and those of our allies, viz.:—Stobhill, Royal, and Western Infirmaries, 37,404; Woodside Hospital, 20,019; Springburn Hospital, 11,250; auxiliary hospitals and convalescent homes, 56,280; Mediterranean Expeditionary Force (Alexandria and Malta), 26,843; the Navy, 6,040; the R.A.M.C., 4,840; the Canadian Contingent, 2,410; to Indian hospitals, 9,599; to France, 177,386; to Belgium, 23,524; to Serbia, 19,974—total, 395,568. In addition, there have been sent out 148 cases of books and magazines, 236,884 cigarettes, 721 lb. tobacco.

At the same time the executive committee of the branch received a report from Mr. Crawford, the Red Cross officer in charge of the Scottish Motor Ambulance Unit at Rouen, giving statistics of the work done by the Scottish ambulances there for the period to 31st July. Up to that date there were 4,586 car runs, with a mileage of 56,900 miles. The number carried was 35,372, including 17,980 sitting patients, 12,335 stretcher cases, and 5,057 orderlies and officers. The work done by the ambulances of the branch at Glasgow had been equally important. Up to 11th August the number of car runs in that district was 15,953, with a mileage of 130,151 miles. The total number carried was 48,853, including 37,975 sitting patients, 3,183 stretcher cases, and 7,695 orderlies and officers. Equally satisfactory work on a smaller scale had been carried out at Stirling, Dunfermline, Falkirk, and Lanark.

No statistics were, of course, available of the work done at the front by No. 8 Motor Ambulance Convoy, which was presented to the War Office by the Scottish Branch, but the reports received from the military authorities indicated that the Scottish convoy had been of the greatest service. In a letter received in July, Colonel Evans, who commands the motor ambulances at the front, wrote:—"You will be glad to hear that No. 8 Motor Ambulance Convoy, consisting of ambulances presented by your branch, is doing great work with the First Army."

On this date, too, Messrs. Kerr, Andersons & MacLeod, honorary treasurers of the branch, reported a donation of £3,640, 14s. towards the funds of the Society from the Scottish leather and allied trades. £1,200 of that sum was to be devoted to the cost of erecting the operating theatre in the Scottish National Red Cross Hospital.

On 25th August, in George Square, Glasgow, the Lord Provost, on behalf of the subscribers, handed over to the branch six motor ambulance waggons presented by members of the licensed trade in Scotland, from whose subscriptions a sum of over £4,000 had been collected. A sale of free gifts, held at Peebles in aid of the war fund of the branch, realised over £200, and a similar sum was obtained as the proceeds of a garden fête promoted by the Countess of Stair in the grounds of Lochinch, Castle Kennedy. At the end of the month it was announced that the Children's War Effort (a system of collections made by the children of the various schools of the city) had resulted in the addition of a sum of £1,400 to the funds. A fête was held in Rothesay Castle under the auspices of the Marchioness of Bute, at which the gathering was addressed by the Marquis and Marchioness and by Private May, V.C. The sum realised for the funds of the Bute Branch was £980. A similar fête was held in the grounds of Fullarton, Ayrshire, where Sir Matthew Arthur and Lady Ailsa spoke on behalf of its objects—the aid of our disabled soldiers and sailors and of the French Red Cross Society. The drawings amounted to £1,120. At Brodick Castle a free gift sale was held under the auspices of the Arran Branch, the drawings amounting to £383.

At a meeting of Paisley Established Presbytery on 1st September it was reported that the sum necessary to provide a motor ambulance for the Red Cross Society from the manses of the Church of Scotland had been realised, the total amount contributed being £525, 18s. 8d. On the following day a motor ambulance provided by the Scottish Bowling Association was handed over to the branch. The Association aimed at providing at least half a dozen of these ambulances, and the subscriptions had already amounted to £2,000, while it was expected that another £1,000 would shortly be raised. A sale of garden produce, &c., held at Coltness, and promoted by Mr. Houldsworth, realised £123. Of the sum of £279, 10s. collected for local Red Cross organisations in Bridge of Allan and neighbourhood, £110 were allotted to the Bridge of Allan Red Cross Work Party, £110 to the Hyndwood Convalescent Home, and the balance to smaller organisations. A garden fête and concert held at The Hall, Thorntonhall, realised about £100.

On 8th September the Proudfoot Institute, Moffat, was formerly opened as an auxiliary Red Cross hospital by Lady Cross, Marchbankwood. A statement was issued showing by the list of interesting and valuable donations from contributors all over Scotland how greatly the sympathies of the donors were engaged on behalf of the forthcoming Red Cross sale. On the following day an appeal was made for comforts for hospital ships, and it was stated that since the outbreak of war the following garments had been issued from the store at St. Andrew's Halls:—To France, 180,943; to Belgium, 23,824; to Serbia, 22,074; to Russia, 50; to military and Red Cross hospitals, 69,097; to auxiliary hospitals and convalescent homes, 60,473; to Mediterranean Expeditionary Force, 33,241; to Indian hospitals, 9,599; to Canadian hospitals, 2,410; to the R.A.M.C., 4,840; to the Navy, 7,705; making a total of 414,256. In addition, there had been sent out 260,834 cigarettes, 765 lb. tobacco, 150 cases books, also games, stationery, walking-sticks.

From the tramway collecting boxes there had already been received four sums of £50, to be devoted to endowing beds at the Scottish National Hospital. Supplies of game for the use of the various hospitals continued to be sent in large quantities.

A bazaar held in the Town Hall, Airdrie, on 11th September, in aid of the funds of the Branch, and to provide beds in the Scottish National Hospital, resulted in drawings of over £1,240. A garden fête arranged by the Hon. Mrs. Douglas Campbell in aid of the Milngavie War Work Depôt realised £150.

On the 16th was published the report to the War Executive of a deputation which had recently visited France for the purpose of inspecting the ambulance work conducted there by the Scottish Branch, and of conferring with the Director of Transport as to the arrangements. They inspected over 60 of the motor ambulances which the Branch had sent to France, and were very gratified with the care and attention which had been given to these by the drivers in charge, and with the satisfactory condition in which they were found to be, having regard to the continuous and arduous work to which many of them had been subjected. The men were all comfortably housed under canvas—three men to each tent. Their billets were clean and neatly arranged, and the men had planted little gardens round each. The kitchen and cooking arrangements were complete and ample, and the men were well and comfortably fed; but with a view to the better housing of the unit through next winter, and to the comfort of the drivers when they came in off night duty, the Executive had agreed, on the recommendation of the deputation, to the erection of a commodious mess and recreation hut with a drying room attached. There were ample means for recreation, and a cricket field, a football field, and a lawn tennis court were adjacent to the ambulance camp.

The deputation saw about 60 of the ambulances deliver 343 patients from 12 different hospitals in the vicinity of Rouen to a hospital ship for transport to England, the whole proceeding from the time when the patients left the hospital till the last patient was comfortably housed on the ship covering a period of only about an hour and a half. The relations and co-operation between the Scottish ambulance unit and the military authorities were of the closest and friendliest character, and the deputation were much gratified with the expressions of appreciation conveyed to them by military authorities in high command as to their efficiency and usefulness. The deputation visited the Scottish Hospital at Rouen, and were pleased to note the very complete arrangements made for dealing with the wounded there, and to hear the very favourable comments regarding the skill and attention of the surgeons and nursing staff. They found evidences of efficient Red Cross work all over the country. The deputation were privileged by the courtesy of the military authorities to visit ambulance train depôts, camps, military hospitals, and Army Service Corps depôts, and see much of the organisation and arrangements necessary to the equipment and health of the armies in the field, and expressed themselves as much struck with the complete, studied, and methodical arrangements which were everywhere in evidence.

Towards the end of the month an appeal was issued by the Headquarters Clothing Committee for the following list of articles:—Flannel and Ceylon day shirts, pyjamas, and night shirts (the last, both hospital shape and ordinary), bed jackets made of flannel, also handkerchiefs and slippers. The committee had learned from the authorities in charge of the Mediterranean hospitals that warmer clothing would be needed in the coming months.

On 25th September a floral day was observed in Kilmarnock, the proceeds, £143, 3s. 2d., being devoted to the aid of the Red Cross funds.

At the annual meeting of the Executive Committee of the Scottish Federation of the National Union of Women's Suffrage Societies, held in Glasgow on the 27th, the work of the Scottish Women's Hospitals was considered. Mrs. Hunter gave a report of her recent visit of inspection, as chairman of the Scottish Women's Hospital Committee, to France, where she had been greatly impressed with the work being carried on at the Abbaye de Royaumont and at the Chateau Chanteloup, Troyes. Miss Craigie reported on the Serbian Hospitals. The subscriptions received to date were a little over £60,000, but with over 1,300 beds to maintain, in addition to the initial expenditure in equipping and staffing all the hospitals, an estimated weekly expenditure of at least £1,000 was being incurred, and the sum of £100,000 was necessary to continue efficiently the work undertaken. The appreciation of the Serbian authorities of the work of the committee had been recently expressed by the opening of a drinking fountain in one of the principal streets in Mladanavatz in honour of the Scottish Women's Hospitals and their founder, Dr. Elsie Inglis. A scheme proposed by the hon. treasurer of the Federation to enlist still further the assistance of the working men and women of the country was laid before the meeting and favourably considered. In connection with this it was reported that the Ayrshire Trades Council at their last meeting unanimously resolved to give the scheme their hearty support.

It was reported on 30th September that the ambulance train built by the Caledonian Railway for service in France had already been visited by over 210,000 people in the various towns in which it had been shown. As the charge for admission was a shilling, this would imply a sum of £10,500 to be devoted to the funds of the Scottish Branch.

REVIEWS.

Gunshot Injuries of Bones. By ERNEST W. HEY GROVES, M.D., M.S.Lond., F.R.C.S.Eng., Captain R.A.M.C.(T.). Oxford War Primers. London: Henry Frowde and Hodder & Stoughton. 1915.

MR. HEY GROVE'S endeavour in *Gunshot Injuries of Bones* is to present in broad outline certain general principles regarding bone injuries rather than to formulate final conclusions about war wounds, since the time has not yet come for the latter.

He explains that his book was written amidst the hurry and stress of active military service, but those who are so well-advised as to read it will find but little ground for the apology.

The limited space of 120 pages has been utilised to the greatest advantage, for in it the author has contrived not only to deal in some detail with the practical side of his subject, but also to give very instructive sketches of pathology and physiology. One or two of the principles on which he enlarges may be mentioned:—

> The periosteum is a limiting membrane; it never forms bone.
>
> A compound fracture consists of a wound of soft tissues and a broken bone. The treatment of one must never be allowed to cause neglect of the other.
>
> It should not be lightly assumed that loose fragments of bone shafts are going to die, and therefore ought to be removed. Every piece of osseous tissue is a source of bone repair material.
>
> The tying of the wounded limb to a stick may be perfectly good first-aid treatment, but it ought not to be the model and pattern for all subsequent procedures.

Touching on the vexed question of open operation for fixing bone fragments in septic cases, Mr. Groves states the arguments for and against, then sums up against the procedure, and in favour of improved extension methods.

The book is brightly written, and shows occasional flashes of humour when the author sees fit to refer to antiquated methods, but there is never lack of dignity. The hypercritic might object to the use of a split infinitive here and there, and to the spelling of "alignment," the author apparently preferring "alinement."

We believe there are few having the care of wounded at the present juncture to whom *Gunshot Injuries of Bones* will not prove of great value.

The Stretcher Bearer. By GEORGE M. DUPUY, M.D. London: Henry Frowde and Hodder & Stoughton. 1915.

DR. DUPUY'S little volume is published in the hope that it will prove a useful addition to the Royal Army Medical Corps Training Book. It contains no less than 138 excellent prints from photographs, each illustrating a particular manœuvre in stretcher drill or first-aid work.

Since the present war has added a new feature to ambulance work, viz., the treatment of asphyxia from breathing irrespirable and poisonous gases, the author has found it necessary to insert a short chapter on that subject. This, except for the preface and an introduction by Mr. F. S. Crisp, is the only letterpress in the book.

The Stretcher Bearer should prove a useful adjunct to the official manual.

Wounds in War. By D'ARCY POWER, M.B.Oxon., F.R.C.S.Eng. London: Henry Frowde and Hodder & Stoughton. 1915.

IT would be difficult to choose a subject on which more differences of opinion are to be found at the present time than that of the treatment of wounds in war. Despite the very large number of works which have already been issued to deal with the same problem we welcome Mr. Power's, both for its intrinsic merits and because in the multitude of counsellors there is safety.

That the author has accomplished a very difficult task in compressing so much valuable information into one hundred pages is easily conceded; still, if the canons of proportion had been in some places better observed the space allotted to the subjects treated would have been more in accordance with their relative importance. For instance, the reader might have been credited with knowing that the micro-organisms causing suppuration are called pyogenic organisms. Thirteen pages is too large a portion of such a small book to devote to the ligation of named arteries; some of the space so consumed might with advantage have been added to the half-dozen pages in which the now all-important subject of amputation is dismissed.

Nevertheless, what the book contains is good, brightly written, and presented in logical sequence.

Wounds of the Thorax in War. By J. Keogh Murphy, M.C. Cantab., F.R.C.S., Staff-Surgeon, R.N.V.R. Oxford War Primers. London: Henry Frowde and Hodder & Stoughton. 1915.

Mr. Murphy's work on wounds of the thorax begins with the usual description of the various projectiles used in modern warfare and their effects in general. Particular consideration is next given to injuries of the thorax, immediate and later effects being dealt with, among them hæmothorax, pyothorax, and pneumothorax. Then follows detailed description of treatment, concluding with a chapter on bacteriological therapeutic methods.

The name of the author raised expectations that the matter of the book would well repay perusal, expectations which were fully realised. Unfortunately, however, Mr. Murphy's mode of exposition cannot be considered satisfactory. That the English is slipshod and slovenly need not perhaps cause surprise when the circumstances under which the book was written are remembered, but we cannot so easily gloss over the flippancies that the author has thought proper to indulge in, of which that occurring in the description of emphysema may be taken as an example: "It spreads rapidly," he says, "downwards over the abdomen, upwards over the neck, face, and head, converting rapidly the athletic soldier into a beatified German sausage."

Wound Infections. By Colonel Sir ALMROTH E. WRIGHT, M.D., F.R.S. London: University of London Press, Limited, and Hodder & Stoughton. 1915.

"WOUND INFECTIONS" is an address delivered by Sir Almroth Wright before the Royal Society of Medicine, and deals, as it must, with general considerations rather than descriptive detail.

More than half of the book is given over to investigation of the nature of infection and the conduct of the body defences. The remainder deals with treatment scientifically based on conclusions from the previous investigation.

It is a connected story, from which it would be neither easy nor fair to extract quotations, but it may be summed up as a most instructive piece of work that will make a valuable addition to the scientific side of surgery.

If Sir Almroth Wright has not yet succeeded in solving the great problems of wound infection, at least he shows us in this essay what seem to be the paths along which solutions must be sought.

Abdominal Injuries. By RUTHERFORD MORISON and W. G. RICHARDSON, M.B., F.R.C.S. London: Henry Frowde and Hodder & Stoughton. 1915.

MR. MORISON has written this manual in response to a request to furnish "an account of abdominal injuries to aid medical men who may be called upon in these strenuous times to act in emergency, and whose knowledge of abdominal surgery may have grown somewhat rusty."

Works have been known to miss their primary aim and yet succeed. If the market for the booklet under review depend mainly on the class of practitioner for which, ostensibly, the manual has been prepared, it is to be feared that its circulation will be but limited. As it may safely be predicated that the "rusty" operating surgeon does not exist, we take the preface to mean that the book will help to train physicians and general practitioners for abdominal surgery. If these are called upon to act in emergency, the emergency will probably solve itself while they, knife in hand, are looking for the place in the book. Yet the little work is quite worthy the notice of surgeons in practice.

In a hundred odd pages the author deals with essentials of diagnosis, operative measures, after-treatment, and complications, while much good advice is inserted in the form of "tips" and of warnings.

Mr. Morison has had Colonel Richardson's name placed with his own as a tribute to the Colonel's excellent work in producing the diagrams.

This is one of the Oxford War Primers. It is bound in khaki and is of convenient size for the pocket.

Medical Hints, for the Use of Medical Officers Temporarily Employed with Troops. By J. EDWARD SQUIRE, M.D., F.R.C.P., D.P.H. London: Henry Frowde and Hodder & Stoughton. 1915.

THIS is an extremely useful little book. At the present time, when so many practitioners are performing military duties, it brings forward in small compass the essential differences between military and civil practice, and emphasises just those points wherein the sick soldier differs from the sick civilian. The sick soldier, however slight his ailment, if unfit for full duty, must go to hospital, and consequently a large part of the doctor's time is taken up with the prevention of disease.

Having indicated that the chief function of the medical officer is the prevention rather than the treatment of disease, the author considers certain general diseases to which soldiers are specially liable, and then certain conditions, such as frost-bite and the effect of noxious gases, by which soldiers are peculiarly liable to be affected in the present war.

The effect and deprivation of alcohol and tobacco are treated in a sane manner, and the difference between the neurotic patient and the malingerer is clearly brought out, while in the chapter on "Marching" it is shown how the doctor can care for the men while they are actually on the march.

In the chapter on "Discipline in hospitals" the author shows how, as the soldier's whole life is ruled by discipline, this discipline must extend even to the hospital, and some useful hints are given as to the conduct of the medical officer himself.

Précis de Chirurgie de Guerre. Par EDMOND DELORME. Paris: Masson et Cie. 1914.

IN a preface not unduly modest Dr. Delorme recalls the great success of his previous work, *Conseils aux Chirurgiens,* and introduces his *Précis de Chirurgie de Guerre.*

The early part of the book is devoted to descriptions of the missiles of warfare, and a general consideration of the wounds inflicted by them. The remainder is taken up with the discussion of injuries to particular regions and their treatment.

Conservatism is the keynote of M. Delorme's *Précis* throughout. He pleads earnestly for the sparing of limbs, and with this he will find many in agreement:

"L'amputation immédiate n'est pour ainsi dire jamais indiquée dans les traumatismes par balles. Elle n'est admissible que dans les cas de gangrène confirmée."

It is to be feared, however, that twelve months' experience of the present war will not have prepared all surgeons to endorse his views on the treatment of penetrating wounds of the abdomen:

"En principe la laparotomie immédiate est à rejeter. Les guerres les plus rècentes . . . ont affirmé sa nocivité."

Dr. Delorme, it may be explained, completed the *Précis* in September, 1914, and presumably his doctrines were based entirely on the lessons of other campaigns.

For the book in general we have little but praise. Frequent references to the author's beloved *Conseils aux Chirurgiens*, and to his own splint (gouttière metallique à valves de Delorme) have a tendency to pall, but these may not be considered blemishes by everyone.

Appendicitis: A Plea for Immediate Operation. By Edmund Owen, F.R.C.S., D.Sc.(Hon.). Bristol: John Wright & Sons, Limited. 1914.

In the minds of both the medical profession and the public appendicitis is still the disease of the moment, and a spate of fresh literature on the subject comes, therefore, not unexpectedly. The controversy on "immediate" *v.* "expectant" treatment continues to be waged, and Mr. Edmund Owen contributes to it a monograph, entitled *Appendicitis,* in which are embodied much practical wisdom combined with the results of his great experience as a surgeon. Mr. Owen is a whole-hearted advocate of immediate operation in acute appendicitis, and the weighty and trenchant arguments in his bright essay will do much to diminish still further the decreasing numbers of those who favour the "interval" policy. Seldom have we had the pleasure of reading a technical work at once so instructive and so interesting—indeed, it is a book which is laid down with much the same reluctance as an engrossing novel.

The Newer Physiology in Surgical and General Practice. By A. Rendle Short, M.D., B.Sc., F.R.C.S. Third Edition, Revised and Enlarged. Bristol: John Wright & Sons, Limited. 1914.

Dr. Rendle Short's well-known book, to which those surgeons and general practitioners who are familiar with it must owe a deep debt of gratitude, has reached a third edition in the brief space of three years. Its newest form should both widen the already large circle of its readers, and should induce many of those who possess an earlier edition to acquire the last. Not only are its chapters enriched with all the most recent and important additions to the physiology of the subjects with which they deal, and with the practical applications of these additions, but a number of new chapters have been introduced which much extend the usefulness of the volume. Comparing it with the first edition, we find entirely new chapters on vitamines, the genital glands, surgical shock, and the growth of bone, while the chapter on blood-pressure, now a familiar subject, has disappeared to make room for additions in other parts of the book. Many articles are largely rewritten, and as it now stands, the work is an indispensable accompaniment to the intelligent practice not only of surgery but of medicine.

Urgent Surgery. By FÉLIX LEJARS. Translated from the Seventh French Edition by WILLIAM S. DICKIE, F.R.C.S. Bristol: John Wright & Sons, Limited. London: Simpkin, Marshall, Hamilton, Kent & Co., Limited. 1914.

THE surgical treatment of non-urgent conditions, usually in the form of radical cures, can, in the majority of cases, be planned for some time before carrying out. The "emergencies," be they injuries or the various acute abdominal diseases, call for rapid decisions and varying technique.

Urgent Surgery by M. Félix Lejars stands probably in the forefront of works for the practising surgeon. While recognising that the form of the morbid condition varies with the individual, it may yet be claimed for this book that the possible complications the surgeon may be faced with are as nearly and as well covered as can be done by description alone.

This issue is an excellent translation by Mr. William S. Dickie of the seventh French edition, and its material is modern to the moment. The discussion of the different operative procedures never fails to induce vivid and correct mental pictures, and to the surgeon in daily contact with the conditions treated of the volume is at once stimulating and of intense interest.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

MEDICINE.

Mode of Action and Use of Emetin in Entamœbiasis. By Randolph Lyons, M.D. (*American Journal of Medical Sciences*, July, 1915).—The author sums up the advances made in our knowledge of emetin, and its uses. Ipecac. and emetin, when taken orally or hypodermically, act through absorption into the blood-stream, and exert their specific action only on those entamœbas in the tissues. Those free in the lumen of the gut are apparently unaffected. It is not definitely known in what form ipecac. and emetin are eliminated. There is some experimental evidence that emetin taken by the mouth is not eliminated in the fæces. Relapses are due to the survival of entamœbæ, probably through encystment. In the carrier state the entamœbæ are probably simply harboured in the lumen of the gut like bacillus coli. Emetin is best given subcutaneously, small repeated injections being preferred. In severe cases it should be used intravenously. Administration by mouth gives rise to intestinal irritation. For the same reason emetin is not suitable for colonic irrigations. In an ordinary case of dysentery an average of 1 grain daily, or less, is sufficient. The duration of the treatment is from one to two weeks. Too large doses, or too prolonged treatment, may cause persistent diarrhœa. To prevent relapses an intermittent form of treatment should be instituted in every case, even although cysts are not found.

Emetin, subcutaneously and locally, has been shown to be practically specific in pyorrhœa alveolaris. Its use in the treatment of hæmorrhages is entirely empirical, and of questionable value.—ARCHD. W. HARRINGTON.

Alternation of the Pulse: A Common Clinical Condition. By Paul Dudley White (*American Journal of Medical Sciences*, July, 1915).—The author has found alternation of the radial pulse in 71 patients in the wards, and among the out-patients of the Massachusetts General Hospital in a period of eight months. Radial pulse tracings were taken from 300 cardiac and cardio-renal patients. Alternation has occurred as commonly as auricular fibrillation; 66 of 201 cases examined who were suffering from cardiac decompensation in some degree showed pulsus alternans; 65 others of the 201 showed auricular fibrillation; 15 of the patients having alternation showed it constantly, 55 only after premature beats, and 1 showed a phasic type.

The finding of ventricular extrasystoles has been of considerable value in the present series, 77 per cent of the cases requiring the premature beats before the alternation of the pulse was exposed.

The condition was found most often in late middle life or old age, and hypertension was associated in 52 per cent of cases. Cardiac enlargement was practically a constant finding. Syphilis and rheumatism apparently played a less important part in the production of the myocardial weakness than did arterio-sclerosis.

Electro-cardiographic examination of 44 of the cases gave evidence of damage to the *a-v* bundle in 15 cases, or 34 per cent. Electro-cardiographic alternation was found in the T deflections after premature beats in 7 of 18 cases which showed premature beats on the records obtained. Only in 3 cases was there any alternation of the R-S deflection after premature beats.

Digitalis and rest in bed produced clinical improvement in 32 of 53 cases in which digitalis was administered, even although the pulsus alternans may have persisted. In 4 cases the alternation was diminished or banished after this treatment.

Twenty-five of the 71 cases died within ten months of observation, the majority of the deaths being attributable, as far as could be determined, to the cardiac condition only. The greater the degree of alternation, the shorter was the expectation of life.—ARCHD. W. HARRINGTON.

Immediate Results of Splenectomy in Pernicious Anæmia. By Roger I. Lee, M.D., Beth Vincent, M.D., and Oswald H. Robertson, M.D. (*Jour. Amer. Med. Assoc.*, 17th July, 1915, p. 216).—In this paper are recorded the immediate results of splenectomy in five unselected cases of pernicious anæmia.

CASE 1.—Male, æt. 43, sixth attack. Reds, 2,525,000; hæmoglobin, 60 per cent; whites, 5,000. Three and a half months after operation looked and felt well—reds, 5,028,000; hæmoglobin, 80 per cent; whites, 9,600.

CASE 2.—Male, æt. 54, second attack. On admission to hospital blood examination gave following:—Reds, 736,000; hæmoglobin, 15 per cent; whites, 3,000. With blood transfusion improved and immediately before operation blood examination gave—reds, 3,000,000 and hæmoglobin 22 per cent. Three and half months after splenectomy—reds, 3,968,000; hæmoglobin, 73 per cent; whites, 15,400.

CASE 3.—Male, æt. 31, fourth attack. On admission to hospital—reds, 2,304,000; hæmoglobin, 55 per cent; whites, 3,800. Just before splenectomy reds numbered 1,920,000. Two and a half months after splenectomy—reds, 4,112,000; hæmoglobin, 77 per cent; whites, 12,500.

CASE 4.—Male, æt. 43, second attack. On admission to hospital—reds, 1,344,000; hæmoglobin, 50 per cent; whites, 4,400. Just before splenectomy—reds, 1,628,000; hæmoglobin, 70 per cent. Three months after operation—reds, 4,824,000; hæmoglobin, 80 per cent; whites, 9,800.

CASE 5.—Male, æt. 44, second attack. On admission to hospital—reds. 800,000; hæmoglobin, 28 per cent; whites, 2,000. Immediately before operation—reds, 2,000,000; hæmoglobin, 57 per cent; whites, 5,000. Two and a half months after splenectomy much improved in health—reds, 2,904,000; hæmoglobin, 60 per cent; whites, 6,000.

Pathology of spleen.—Two were enlarged, weighing 192 and 237 grms. respectively. No gross lesions detected and microscopically congestion of pulp with fewer cells than normally, only constant change. In two many normoblasts were seen, and in one case a few areas of primitive erythroblasts, suggestive of blood formation, were present.—LEONARD FINDLAY.

Mental and Physical Survey of Supposedly Normal Children. By Langley Porter, A. Huffaker, and A. Ritter (*Jour. Amer. Med. Assoc.*, 21st September, 1915, p. 675).—This report refers to 195 children over 2½ years of age transferred to "foster homes" by Children's Agency of Associated Charities in San Francisco on account of neglect due to illness, intemperance, or immorality of their parents. Fifty-five per cent required dental attention, and yet there was very little anæmia, and practically no digestive disturbance; 53 per cent presented hypertrophied tonsils; 8 per cent were tuberculous; 2 per cent gave a positive Wassermann reaction.

Psychologic examinations were conducted in 119 of the cases. 66·5 per cent were absolutely normal. 23·0 per cent were retarded, *i.e.*, with intelligence below the average, due probably to home conditions, and susceptible of great benefit by improved hygienic and moral surroundings. 7 per cent were borderland cases, so-called because intelligence was good, but unstable and had been subject of pernicious influences at home. 3 per cent were morous, *i.e.*, definitely feeble-minded. 0·8 per cent were imbecile.

These authors remark that striking facts emerging from the investigation are (1) 33·5 per cent of mentally retarded children, and (2) 8·0 per cent of cases with definite tubercular infection.—LEONARD FINDLAY.

The Germicidal Effect of Lactic Acid in Milk. By P. G. Heinemann (*Jour. of Infect. Diseases*, 1915, vol. xvi, p. 479).—This paper is the subject of an editorial in *Jour. Amer. Med. Assoc.*, 24th July, 1915, p. 341, from which the following is taken:—

The beneficial effect of buttermilk in gastro-intestinal disease both in adults and children is well known; in fact, there are certain schools of pediatrists who hold that buttermilk is the best artificial diet for infants. True buttermilk is, of course, a by-product in the preparation of butter, but approximately the same commodity can be made by fermenting separated milk or skim milk, and all varieties owe their power chiefly to the presence of lactic acid, but also to a certain extent to the absence of fat.

Heinemann has shown that although some forms of bacillus coli survive in the presence of 0·6 per cent lactic acid in milk, bacillus dysenteriæ, bacillus typhosus, bacillus diphtheriæ, bacillus paratyphosus, and spirillum choleræ, as a rule, were destroyed by the presence of 0·45 per cent lactic acid. He has also shown that the more slowly the milk sours the greater is the risk of pathogenic germs surviving, as the degree of acidity necessary for their destruction may not be developed by the time these organisms have enormously multiplied. In consequence not all buttermilk can be considered safe, and it is advisable only to use that made from milk which has been pasteurised and quickly fermented.

—LEONARD FINDLAY.

The Diagnosis and Treatment of Gonococcal Vulvo-vaginitis in Infants and Young Children. By Charles C. Norris, M.D. (*Jour.

Amer. Med. Assoc., 24th July, 1915, p. 327).—In this paper the author draws attention to the great difficulty of detecting the presence of the organism in the chronic stage of the infection, and suggests the method first proposed by Van Gieson, which consists in examining washings of the vagina.

The patient is placed with hips elevated, and the vagina distended with a solution of 1 in 5,000 mercuric chloride in normal saline. The walls of the vagina are then gently rubbed with a glass rod so as to loosen any adherent mucus. This solution is then removed by a syringe, centrifugalised, and sediments examined as usual. The author claims for this method that cells with intracellular organisms are not damaged, and diagnosis is consequently facilitated. If this method is not successful in revealing the organism, he recommends that on the day previous to douching the vagina be painted with a 5 per cent or 10 per cent solution of silver nitrate—a procedure which materially helps the staining properties of organisms, as well as causing a reaction and shedding of epithelial cells.

He contrasts his results in 21 cases obtained by simple smear, by douching, and by the method with silver nitrate plus douching. By the first method he gets 45 per cent of positive results; with the second, 75 per cent; and with the third method, 97 per cent of positive findings.

So far as treatment is concerned, Norris advises very thorough cleansing and drying of the vagina with gauze swabs, and in order to carry this out thoroughly the hymen should be incised or dilated; thereafter the vagina is swabbed with a solution of 25 per cent argyrol. This procedure should be carried out thrice weekly, with daily douchings by nurse or mother, and a cure is, in the author's experience, obtainable in a matter of ten to twelve weeks.—LEONARD FINDLAY.

Involvement of the Urinary Tract as a Result of Focal Infections in Children. By Clifford G. Grulee, M.D., and F. W. Gaarde, M.D. (*Jour. Amer. Med. Assoc.*, 24th July, 1915, p. 312).—In this paper are recorded the histories of six children varying between the ages of 2½ and 6 years, in whom there developed six to seven days after tonsillitis or otitis media, hæmaturia accompanied by fever, slight anæmia, and a polymorphonuclear leucocytosis. The urine contained abundant red blood cells, pus cells, blood-casts and albumin. In none was there any œdema, nor did scarlet fever develop, although no precautions were taken to isolate the children. In all recovery was rapid, and in two cases immediate, following excision of a tonsil in one and drainage of mastoid cells in the other. In two cases the urine was sterile; in two staphylococcus albus, in one streptococcus hæmolyticus, and in another staphylococcus albus and streptococcus hæmolyticus were obtained by culture of urinary sediment. In one case blood culture revealed the same organism as was found in the urine. Urinary antiseptics were administered, but the authors do not think that they had much to do with curing the mischief.—LEONARD FINDLAY.

The Indications for Surgical Intervention in Pulmonary Tuberculosis. By H. Morriston Davies, M.D. (*The British Journal of Tuberculosis*, January, 1915).—An early active lesion is the type of case which derives the most permanent benefit from collapse and consequent immobilisation of the lung. Results are also satisfactory with cavitation, provided fibrosis is not excessive.

Unilateral cases are best for mobilisation by nitrogen displacement, but bilateral infection is no contra-indication, provided there is sufficient lung tissue on the untreated side. A rapidly progressive lesion and acute miliary tuberculosis, if unilateral, should be treated immediately. During tubercular pneumonic infection the consolidated lung cannot be collapsed.

Where nitrogen displacement is impracticable rib mobilisation is indicated. Tuberculin should not be given when the lung is displaced.—JAMES SCOTT.

Recent Views on Laryngeal Tuberculosis. By Harold Barwell, M.B. (*British Journal of Tuberculosis*, January, 1915).—Percy Kidd estimates that 50 per cent of those dying from pulmonary tuberculosis show lesions of tuberculous laryngitis *post-mortem*, and that the disease is clinically recognisable in 20 to 25 per cent, excluding those in the last stage of illness.

Besold, Falkenstein Sanatorium, found 20 per cent definitely affected and 7 per cent doubtful.

Sir St.Clair Thomson, Midhurst, found 25·6 per cent out of 693 cases.

The Turban-Gerhardt classification gave the percentage of laryngeal cases according to groups—as Group I, 13·7 per cent; Group II, 27·1 per cent; Group III, 40·8 per cent.

Tuberculous laryngitis must be considered an extremely common complication, and the larynx should be carefully examined in every case of consumption.

The inner aspect of the vocal process is a frequent site of the earliest invasion. Unilateral redness of the cord is very suspicious. A soft velvety swelling of the inter-arytenoid space is another common and characteristic lesion.

Sanatorium treatment with complete vocal rest is indicated. The galvano-cautery is useful. Lake's mixture is useful in diffuse superficial ulceration.

Dysphagia is difficult to treat, but insufflation of orthoform, anæsthesin, and propæsin are useful. Removal of the epiglottis is indicated when it is principally affected.

Injecting alcohol into the superior laryngeal nerve on one or on both sides is useful in extensive ulceration of the upper aperture. Two grains of β-eucaine hydrochloride in an ounce of 80 per cent alcohol are used, and 1 to 2 c.c. are injected into the site of the nerve in the thyro-hyoid space at a depth of about 1½ centimetres with an obtusely-pointed Schlösser's needle. The duration of relief is variable, and recently French workers have practised division of the nerve through an open incision under local anæsthesia.—JAMES SCOTT.

OBSTETRICS AND GYNÆCOLOGY.

Disinfection of the Hands and Abdominal Skin before Operation.—Ellice M'Donald (in *Surgery, Gynæcology and Obstetrics*, July, 1915) discusses various methods of cleansing the hands and skin, and condemns the usual practices of washing and then disinfecting with iodine, alcohol, or mercurial salts respectively. He strongly advocates the use of a mixture of commercial acetone, 40 parts; denatured alcohol, 60 parts; and pyxol, 2 parts. The acetone dissolves fats, and permits the antiseptic to penetrate. Pyxol is a dark liquid, extracted from coal-tar creosote, which forms a white emulsion with water, and a light mahogany-coloured solution with alcohol and acetone. Its germicidal efficiency is twenty times that of phenol, and is not impaired by pus, soap, serum, or other albuminous matter. Pyxol is said to have the following composition:—40 per cent pyxol oil, 30 per cent neutral hydrocarbon oil, and 30 per cent saponified vegetable oil; it is said to be free from carbolic and cresylic acids; the neutral vegetable oils are present only as emulsifying agents.

The agent is applied for one minute by rubbing with the aid of a nail brush and a gauze cloth. The solution is inexpensive, unirritating to the skin, and more efficient than any other known method according to M'Donald's claims, and he says the solution may be used repeatedly though it acquires a sediment of various detritus, for this in no way impairs its efficiency. For the abdomen it is sufficient to rub it over the skin for two minutes without previous washing.

Dr. Sondern, in the same *Journal*, gives tables of his bacteriological examinations of scrapings of the hands taken after infection of the hands, and after disinfecting by this method.

Dr. M'Mullen, in the same *Journal*, gives the results of his experience in 276 major abdominal operations where M'Donald's method of disinfection was employed. He maintains that his results as regards asepsis of the wound were much better than formerly, and claims that the wounds heal much quicker than where the skin has been treated with iodine; indeed, he claims that the healing process is accelerated by three days.

Dr. Stanton, writing in the same *Journal*, corroborates the statements of the two previous papers, and says that in his first 240 cases he had only 2 with septic wounds, and 1 of these was ascribed to a direct infection from the nurse's throat, the other from an error in the preparation of the gut, and in 1914 he had no case of a drop of pus in a case clean to start with.—E. H. L. OLIPHANT.

Rotunda Hospital: Clinical Report for Year ending October, 1914. By Drs. Tottenham and Crichton (*Dublin Journal Med. Sciences*, July-August, 1915).—This annual report is largely in tabular form, and so does not lend itself to abstraction, but a few points may be noted. There were three cases of concealed accidental hæmorrhage. The first patient was admitted in a very weak condition, and did not survive twelve hours after the removal of the unopened uterus with the fœtus. The second patient was also in a weak condition on admission, but without any external bleeding, and without tenderness or enlargement of the uterus. She was treated, after rupture of the membranes, with pituitrin and morphine; some hæmorrhage occurred, and the child was born, but in spite of saline infusions and stimulants the patient died in about an hour. The third patient was treated by plugging before admission, and maintained that the uterus had rapidly increased in size, and as there was much restlessness, supra-vaginal hysterectomy was performed, and the patient made a good recovery.

Pubiotomy was performed four times. The first operation was done after failure to deliver with forceps in Walcher's position. There was some tearing of the vaginal wall during delivery with forceps; the wound was packed, but the patient died of shock in half an hour. The conjunctiva vera was 8 cm. The second and third cases did not present any points of special interest, and the women left hospital on the twenty-sixth and twenty-seventh days after operation. The fourth case was that of a woman who, in her last confinement, was subjected to craniotomy. Pubiotomy was performed prophylactically, and three weeks later the patient was delivered spontaneously after a somewhat protracted labour. She left hospital walking well in fourteen days.

A woman, aged 28 years, in her second pregnancy, was in process of delivery with forceps, as the membranes had been ruptured for twenty-two hours, when a crack was heard, and it was found the symphysis had ruptured. There was no apparent pelvic contraction, and the pull on the forceps was not vigorous. The woman stated that she had delivered herself of an eleven pound baby at the previous labour. This patient died four days later of acute yellow atrophy of the liver.—E. H. L. O.

Infundibulin in Primary Uterine Inertia and in the Induction of Labour.—Mr. Blair Bell, in the *Transactions of the Obstetrical and Gynæcological Section of the Royal Society of Medicine* for May, 1915, brings forward a point of some importance in the action of infundibulin—as he names the extract of the posterior lobe of the pituitary body. Infundibulin has established itself in obstetric practice owing to its power of promoting and augmenting rhythmical and powerful contractions in the uterus during and immediately after labour—that is, it has been used to increase the energy of labour. In this paper he shows that, acccording to his view, infundibulin is capable of *sensitising* the uterus before labour. It has been shown by several observers that it is not commonly possible to induce abortion or labour by the use of infundibulin alone, though at full term labour may occasionally be precipitated by its use.

Mr. Bell's advice is to administer infundibulin a few days before any attempt is made to provoke labour pains mechanically by such means as packing the cervix and vagina, or, better, by passing bougies into the uterus.

In regard to the causation of primary uterine inertia, he considers that the statements of the text-books are pure guesswork or evasions of the confession of ignorance, and goes on to state that there can surely be no doubt that the real cause lies in the deficiency or absence of the normal stimulators of uterine contractions—that is to say, of the hormones, such as infundibulin, and of the compounds of calcium. Primary uterine inertia is, then, due to bio-chemical causes, and it should so be stated in the text-books. After making this assertion he goes on to say that "in calcium salts and pituitary extract we have probably the normal stimulators of uterine contractions in parturition."

In support of this thesis a case is described of a woman who had previously had one still-born child, and also an induced labour, also with a dead child. During her third pregnancy examination showed the uterus to be flabby, while the blood-pressure was low and also the blood calcium index. She was treated with calcium by the mouth and by infundibulin, also by the mouth. Two days after the expected date of the labour two bougies were introduced, and the patient was delivered naturally of a live child which weighed 10½ lb.

In the discussion which followed Dr. Maxwell said he had tried to induce labour with pituitrin and fœtal serum, but had failed. He preferred not to use bougies, but to dilate and introduce a Champétier de Ribes' bag.

Dr. Roberts had not found infundibulin universally successful in causing contraction during Cæsarean section where the operation was performed before the onset of labour.

Dr. Robinson had started labour pains in an hour after introducing bougies along with a dose of pituitary extract.—E. H. L. O.

DISEASES OF THE EAR.

Tuberculosis of the Auditory Apparatus (*Laryngoscope*, April, 1914, and *Journal of Laryngology*, June, 1915).—The subject of tuberculosis of the ear has been discussed within recent months, both in the American Laryngological, Rhinological, and Otological Society and in the Otological Section of the Royal Society of Medicine in London.

Experimental work, clinical experience, and *post-mortem* facts of great interest, described by those taking part in the discussions, are published in detail in the Journals above named.

Dr. Wyatt Wingrave made mention of the fact that the search for tubercle bacilli in the discharge, or in the material removed by curette, was often disappointing, as compared with the search for the same in phthisical sputum, for the bacillus is rarely found except in acute cases. Primary tuberculosis of the ear in the adult seemed specially to select the meatus, probably the result of direct digital infection.

Cases of tubercular otitis media may be divided into two groups :—

1. Tubercular otitis in infants and young children who have been fed on unsterilised cow's milk which contains tubercle bacilli. The statistics of Drs. Turner and Fraser show that under the age of 2 years 27 per cent of the cases of purulent otitis media are due to tuberculosis; while, under 1 year, 50 per cent of the cases are due to tubercular disease. But if cases of otitis media at all ages be taken, only 2·8 per cent are due to tubercle. Dr. Jobson Horner pointed out that the cases occur chiefly during the period of the milk diet of life, and the majority of cases occur amongst bottle-fed and not breast-fed children. Although no proof has yet been obtained that these infantile cases are due to bovine tuberculosis, it is probable that the great majority are due to bovine tuberculosis introduced into the system by the drinking of unsterilised cow's milk.

2. The second type of tubercular otitis media occurs in the advanced stages of pulmonary phthisis. Statements bearing on the frequency of the occurrence of tubercular inflammation of the middle ear in consumptives vary widely. Sir St.Clair Thomson said that he diagnosed two cases of otitis media as being tubercular in nature among seven hundred patients suffering from pulmonary tuberculosis, while Drs. Turner and Fraser saw five cases of otitis media purulenta amongst one hundred and twenty cases of phthisis; but in one only was there any suspicion of the disease of the middle ear being tuberculous.

While there are several possible routes, as enumerated by Dr. Briggs, by which the middle ear may become infected, it is generally agreed that practically there are but two—first, by infection conveyed through the Eustachian tube, which is much the more common; and second, by the blood stream.

Clinically, tuberculosis of the middle ear may appear in one of two distinct types, acute or chronic, in each of which all the changes may be found, from slight infiltration of the mucosa to extensive necrosis of the temporal bone.

Pathologically the conditions met with may be classified as lupoid; infiltrating, somewhat acute, with numerous bacilli but few giant cells; fungating, a chronic form with well-marked tubercle follicles and few bacilli; necrotic, which tends to rapid caseation and destruction of the mucosa; and a fibro-ossifying type.

In the diagnosis much stress was laid on the bacteriological examination of the discharge, on the microscopical examination of granulations removed, and experimental inoculation. The importance of the clinical road to diagnosis, which includes much more than can be observed through the aural speculum, was very properly emphasised by Professor Pritchard and by the President (Dr. Albert Gray).

It was generally agreed that treatment should be based largely on general lines, and where possible be preventive. On the latter point it was remarked that if all tuberculous cows were slaughtered, following a tuberculin test, there would be little or no need for operation on tuberculous otitis media, as the cause would thus be eliminated. So far as the question of treatment by operation may be entertained, the rule laid down by Politzer with regard to the occurrence of tuberculosis of the middle ear in relation to pulmonary tubercle is sound, though limited of application. If the ear trouble developed secondarily to the pulmonary, one should, as a rule, abstain from operation; but if the onset of the middle-ear disease was the first event, operation was advisable.—WALKER DOWNIE.

Report of a Case of Primary Mastoiditis. By Dr. Bonner and Dr. Dutrow (*The Laryngoscope*, April, 1915).—Drs. Bonner and Dutrow here report the case of a man, 65 years of age, who until February, 1915, had had no history of aural affection. In February he had influenza, and one week later his physician noticed a slight swelling over the right mastoid process,. painful on pressure. There was slight injection of the right tympanic membrane, but hearing by both bone and air conduction was normal, and the middle ear was readily inflated. His pulse and temperature were normal, and his nose and throat were unaffected. On the following day the patient complained of a noise in the ear, and in the afternoon he had a sudden attack of giddiness. Operation on the mastoid was recommended, but refused by the patient. For ten days he continued to loss flesh, although there was no rise in his temperature. Then the mastoid was opened. The bone was found to be much ebonised, the superficial cells contained viscid fluid, and when the deeper cells were reached a large quantity of thick yellow pus was evacuated. The entire mastoid process was found to be affected, and yet no trace of suppuration was found in the tympanic cavity.—WALKER DOWNIE.

Books, Pamphlets, &c., Received.

Fibrositis (Gouty, Infective, Traumatic), so-called Chronic Rheumatism, including Villous Synovitis of Knee and Hip, and Sacro-Iliac Relaxation, by Ll. Jones Llewellyn, M.B., and A. Bassett Jones, M.B. London: William Heinemann. (25s. net.)

Manual of Surgery, by Alexis Thomson, F.R.C.S., and Alexander Miles, F.R.C.S. Two vols. Vol. I: General Surgery. Fifth edition, revised and enlarged, with 289 illustrations. Vol. II: Regional Surgery. Fifth edition, revised and enlarged. With 301 illustrations. London: Henry Frowde and Hodder & Stoughton. 1915. (10s. 6d. net each vol.)

Common Disorders and Diseases of Childhood, by George Frederic Still, M.A., M.D. Third edition. London: Henry Frowde and Hodder & Stoughton. 1915. (16s. net.)

Wounds in War: Their Treatment and Results, by D'Arcy Power, M.B., F.R.C.S. London: Henry Frowde and Hodder & Stoughton. 1915. (2s. 6d. net.)

Surgery of the Head, by L. Bathe Rawling, M.B., B.C. London: Henry Frowde and Hodder & Stoughton. 1915. (3s. 6d. net.)

Injuries of Joints, by Robert Jones, Ch.M., F.R.C.S. London: Henry Frowde and Hodder & Stoughton. 1915. (3s. 6d. net.)

Abdominal Injuries, by Rutherford Morison and W. G. Richardson, M.B., F.R.C.S. London: Henry Frowde and Hodder & Stoughton. 1915. (2s. 6d. net.)

Medical Hints: For the Use of Medical Officers temporarily employed with Troops, by J. Edward Squire, M.D., F.R.C.P., D.P.H. London: Henry Frowde and Hodder and Stoughton. 1915. (2s. 6d. net.)

The Stretcher Bearer: A Companion to the R.A.M.C. Training Book, illustrating the Stretcher-Bearer Drill and the Handling and Carrying of Wounded, by Georges M. Dupuy, M.D. London: Henry Frowde and Hodder & Stoughton. 1915. (2s. net.)

Forty-fifth Annual Report on the Operations of the Sanitary Department of the City of Glasgow for the Year ended 31st December, 1914, by Peter Fyfe, Chief Sanitary Inspector. Glasgow: Robert Anderson. 1915.

Applied Anatomy: The Construction of the Human Body considered in relation to its Functions, Diseases, and Injuries, by Gwilym G. Davis, M.D. With 631 illustrations, mostly from original dissections, and many in color, by Erwin F. Faber. Third edition. London: J. B. Lippincott Company. 1915. (24s. net.)

The Ductless Glandular Diseases, by Wilhelm Falta. Translated and edited by Milton K. Meyers, M.D. With a Foreword by Archibald E. Garrod, M.D., F.R.C.P.Lond., F.R.S. With 101 illustrations in the text. Philadelphia: P. Blakiston's Son & Co. 1915. ($7·00 net.)

Text-Book on Nervous Diseases. Authorized English edition. Edited by Charles W. Burr, B.S., M.D. Vols. I and II. With 156 text illustrations in Vol. I and 90 text illustrations in Vol. II. Philadelphia: P. Blakiston's Son & Co. 1915. ($12·00 net.)

Wounds of the Thorax in War, by J. Keogh Murphy, M.C.Cantab., F.R.C.S. Oxford War Primers. London: Henry Frowde and Hodder & Stoughton. 1915. (2s. 6d. net.)

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GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FIVE WEEKS ENDED 23RD OCTOBER, 1915.

	WEEK ENDING				
	Sept. 25.	Oct. 2.	Oct. 9.	Oct. 16.	Oct. 23.
Mean temperature, . .	56·2°	46·6°	48·8°	53·5°	47·7°
Mean range of temperature between highest and lowest,	12·4°	17·5°	15·3°	13·0°	10·9°
Number of days on which rain fell, ...	5	0	4	3	3
Amount of rainfall, . ins.	0·76	0·00	0·33	0·27	1·00
Deaths (corrected), . .	309	314	362	334	329
Death-rates, ...	14·9	15·2	17·5	16·2	15·9
Zymotic death-rates, . .	0·5	0·6	0·7	1·0	0·9
Pulmonary death-rates, .	3·1	2·6	4·7	4·3	5·1
DEATHS—					
Under 1 year, ...	77	74	83	81	93
60 years and upwards, .	84	75	71	78	69
DEATHS FROM—					
Small-pox, ...	...	...	...	...	...
Measles, ...	1	7	4	10	4
Scarlet fever, ...	7	4	7	6	8
Diphtheria, ...	3	2	2	2	4
Whooping-cough, . .	...	1	1	1	...
Enteric fever, ...	...	...	...	1	2
Cerebro-spinal fever, . .	1	2	...	2	2
Diarrhœa (under 2 years of age),	34	36	26	14	14
Bronchitis, pneumonia, and pleurisy, ...	48	46	69	77	86
CASES REPORTED—					
Small-pox, ...	...	...	...	...	...
Cerebro-spinal meningitis, .	3	3	...	4	3
Diphtheria and membranous croup, ...	34	28	36	39	37
Erysipelas, ...	22	30	39	37	29
Scarlet fever, ...	174	148	211	200	158
Typhus fever, ...	...	...	...	...	...
Enteric fever, ...	10	5	7	5	10
Phthisis, ...	47	24	49	43	44
Puerperal fever, . . .	3	3	3	3	4
Measles,*	61	74	73	99	91

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, *29th October*, 1915.

THE

GLASGOW MEDICAL JOURNAL.

No. VI. December, 1915.

ORIGINAL ARTICLES.

THE CAUSE AND SIMILARITY OF ORIGIN OF SCARLET AND RHEUMATIC FEVER.

By WILLIAM WATSON, M.D.,
Assistant Physician, Glasgow Royal Infirmary.

The close similarity of complications and sequelæ in such diseases as rheumatic fever, scarlet fever, and malignant endocarditis leads us to search for a common factor in their cause.

In the absence of sufficient *post-mortem* data, I shall, in this paper, confine myself to evidence, which, though to some extent circumstantial, is at least strong enough to justify an assumption which I hope at a future date to prove by further experiments.

The work of Poynton and Paine in rheumatism, and of Gordon, Bajenski and Summerfield in scarlet fever, establishes almost conclusively that a streptococcus is the cause of both, though it is one which appears in both diseases in a modified form. In the former it is seen as a diplococcus, smaller than the streptococcus pyogenes, growing in short chains, and known as the micrococcus rheumaticus. This is possibly a non-pyogenic organism, perhaps identical with the streptococcus fæcalis, which, under favourable conditions for its growth, takes on a virulent character. In scarlet fever it is seen as the streptococcus conglomeratus or scarlatinæ, in a form distinct from the streptococcus pyogenes. Thus we see that both diseases are said to be produced by an organism belonging to a distinct group, though differing in type, and that in both diseases the seat of origin is said to be in the tonsil. That the tonsil is involved in both diseases is admitted, but it is not possible that it can be the sole or even the most important structure involved. In both diseases the tonsil not infrequently remains normal. In scarlet fever, when the case is malignant, the first symptoms are purely alimentary, and the patient dies from what appears to be acute irritant poisoning. There are severe vomiting, purging, and death from collapse in twenty-four to forty-eight hours without either a rash or a sore throat. The one constant symptom of scarlet fever is vomiting, which shows that there is an alimentary disturbance always present. Finally, we have a scarlatina sine angina, and the so-called puerperal scarlet fever which will be referred to later. Before even the tonsil becomes seriously affected, we have a deep injection of the pillars of the fauces, soft palate and uvula, with a thickly coated tongue already showing its enlarged papillæ. Within four days it has shed its fur, is swollen, uniformly red, glazed, and all its lymphoid tissue is greatly enlarged. The tonsils are now acutely infected and exude their characteristic yellow secretion, but before this is prominent, and before it is conceivable that they could have become such reservoirs of septic poison, we have a general toxæmia as shown by the temperature, rash, and albuminuria.

Again, if we consider how guarded are all the avenues for the entrance of septic poison into the blood by way of the tonsils, and the extensive chain of filtering lymphatic glands connected with them, it seems improbable that we could have septic organisms entering into the blood stream before these portals had undergone degeneration. We must therefore look for some other means whereby its entrance is effected.

When the protecting epithelium of the bowel is weakened or destroyed, we have a more or less rapid toxæmia like that developed in the intestinal catarrhs of teething children. Frequently the giving of enemata is followed by a scarlatiniform rash, a slight rise in temperature, and slight sore throat. In the lower ileum we have a large amount of lymphoid tissue appearing as solitary and agminated glands. Every symptom of scarlet fever points to an acute intestinal catarrh, fatal in severity in malignant cases, productive of intense irritation in the ordinary cases; and often in the later stages of such, a condition appears which closely resembles enteric fever. In such cases there is a remittent temperature, constipation or diarrhœa, and rapid wasting, which often ends in death.

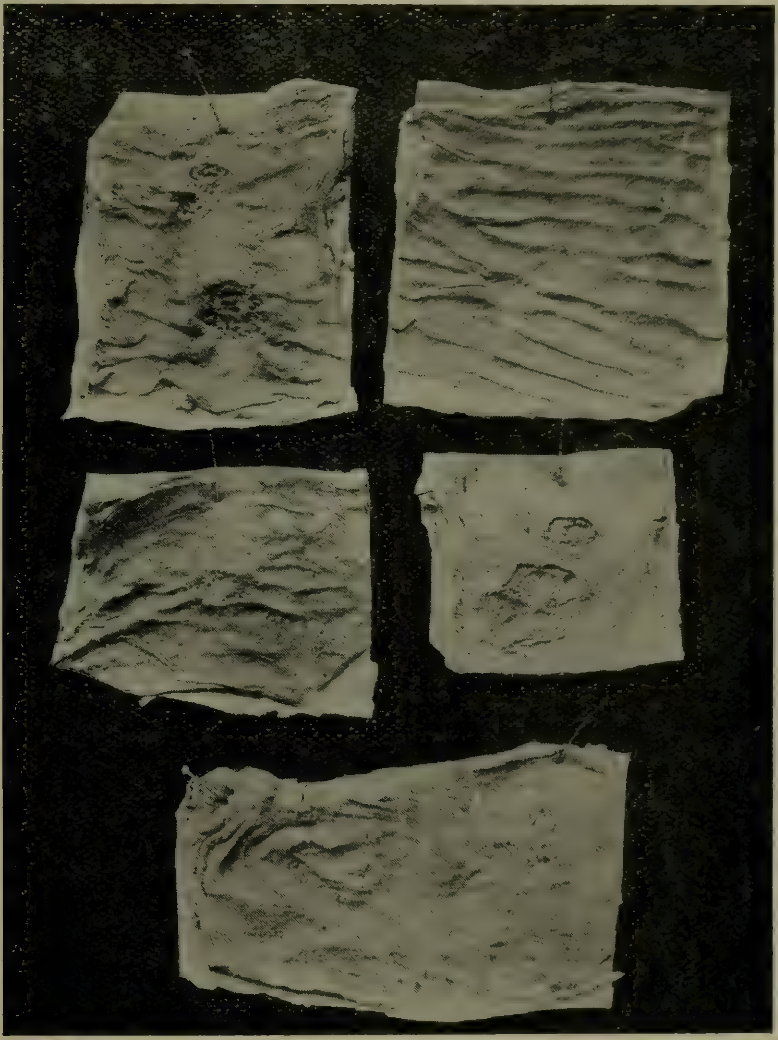

Fig. 1.

Portions of the ileum from a case of scarlet fever.

Fig. 1 is a photograph which I took of the bowel in such a case, which shows a distinct ulceration of the intestine. This ulceration differs from enteric or tubercular ulceration in being more irregular, less extensive, and attacking the solitary glands as well as Peyer's patches, where the resulting ulceration has left small shallow pits in the mucous membrane. This condition, although not common, justifies the assumption that this portion of the bowel plays a very large part in scarlet fever. That it is affected at a very early stage is proved by the photograph which is reproduced in Fig. 2. It was taken by Dr. Elliott, of

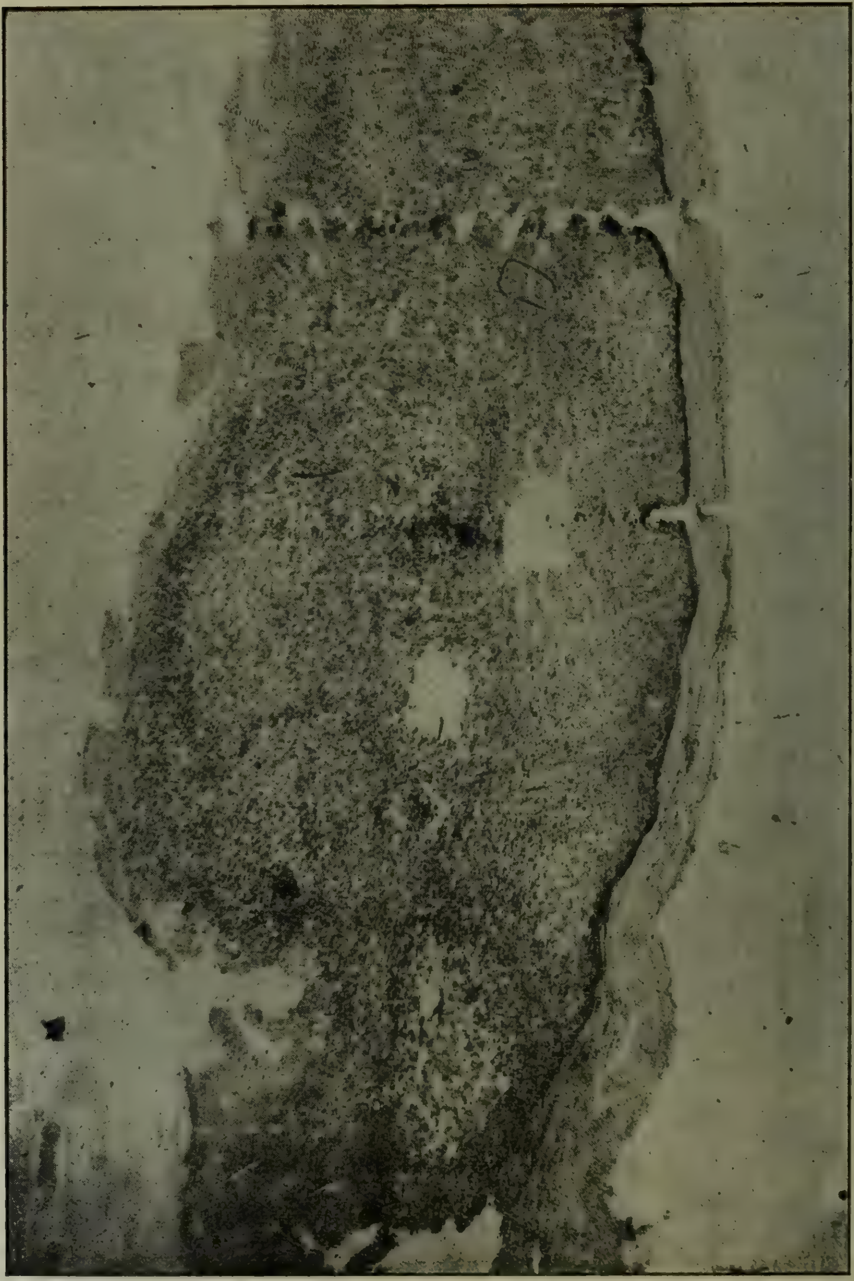

FIG. 2.
Section through a Peyer's patch from a case of malignant scarlet fever.

Ruchill Hospial, by whose courtesy I am privileged to give it here, from a case of malignant scarlet fever, which died within twenty-four hours from the onset of the first symptom of illness. Here we have intense tumefaction of the gland tissue of a Peyer's patch with infiltration of its lymphoid tissue, and thickening, softening, and breaking of the epithelial layer, a condition which, had life been prolonged, would have been the forerunner of ulceration.

From these things we deduce that the poison of scarlet fever is a rapidly acting one, and among its first manifestations is catarrh of the alimentary tract, in malignant cases so acute as to cause death before any other symptom has had time to appear, and in the ordinary cases causing a toxic rash, often albuminuria, a red glazed tongue, and an inflammation of all the visible lymphoid tissue of the alimentary tract. If the resisting power of the patient is sufficient, with the end of the fever resulting from the struggle the invasion may be at an end, but there may be from indiscreet dieting, exposure to cold, or other causes, new developments which often are of a more

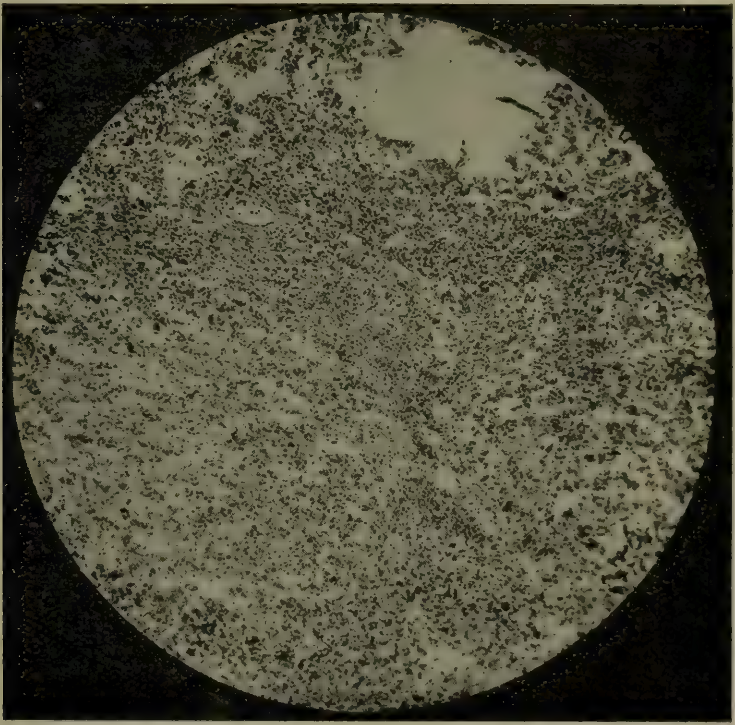

FIG. 3.
The same (Peyer's patch), magnified 66 diameters.

serious nature. These developments are very similar to, if not identical with, in many cases, the symptoms of rheumatic fever.

There are acute articular painful swellings, and a tendency to endocardial and pericardial mischief. In other cases nephritis occurs. The albuminuria may be simple, and is usually associated with constipation, or there may be actual tissue changes in the kidney; and from the presence of such a virulent toxin in the blood, and the great tendency to anasarca, we are prepared to find that it is the Malpighian bodies that are first affected. During this period we have rapid wasting and anæmia supervening, thrombosis, ulcerative stomatitis, sometimes suppuration of the inflamed joints, septic ulceration of mucous membranes, septic thrombi or emboli causing noma—in short, all the symptoms of acute septicæmia.

Much evidence in support of the bowel origin of scarlet fever is gained from a study of the rashes which we sometimes see in influenza, enteric fever, food poisoning, teething of childhood, cases of simple or traumatic catarrh of the bowel, and patients to whom has been administered an enema. All these are admittedly rashes due to the absorption of certain poisons from the bowel, and I think in this class we might also put what some physicians call the fourth disease.

There is a second group of cases in which the rash is due to the absorption of the products of the streptococcus, but in these cases the streptococcus is not acting in the bowel, but in some other organ of the body. These include rashes in certain cases of diphtheria (especially after operation), in puerperal septicæmia, in cases of burns, and in fresh surgical conditions.

That burns and puerperal septicæmia should continue to have their rashes attributed to scarlet fever is a little surprising, and though these cases do not as a rule contract scarlet fever when put into a scarlet fever ward, yet the septic nature of both poisons may have something to do with the immunity. Though there are undoubtedly cases recorded where women in a puerperal state have come into contact with scarlet fever and taken it, yet in the vast majority of cases it is difficult to trace the source of it, and it is usually stated in books to be very obscure but "probably introduced by the accoucheur's hands." Another thing, too, is worthy of note, and that is the absence of secondary cases of scarlet fever in contact with such cases. Hence in the second group of cases, though struck with the similarity of many of the symptoms and the resemblances of the rashes, we must attribute those in all probability to a closely allied though not identical organism gaining entrance to the system by a different portal; but in the first group of cases the poison gains entrance to the system through the bowel, and in all these cases the weakened condition of the bowel would readily permit of this taking place.

In cases of influenza and of enteric fever, where there is a general erythematous rash, the infection must be regarded as a mixed one.

With food poisoning we have, of course, to deal with an irritant septic poison, while in rashes due to teething, catarrh, and enemata, the altered condition of the mucous lining of the bowel permits of the passage into the blood-stream of the products of organisms which may have been swallowed with the food, or of organisms indigenous to the bowel but altered by certain pathological conditions.

Now allow me to contrast with this a case of acute rheumatism or rheumatic fever—most unfortunate names, since they merely indicate symptoms and not a disease. Whenever we have a catarrh of any mucous membrane, we have rheumatism varying in degree from a slight discomfort in the muscles (especially those in the back, from a simple cold) to acute rheumatic pains in severe influenza.

We are familiar with the rheumatism of gonorrhœa, the pain in the tendo Achillis from a catarrhal condition of the liver, and lately I had an obscure case of rheumatism which cleared up after a septic ethmoidal cell had been cleared out. But to take a typical case of rheumatism, with high temperature, swollen and painful joints, we invariably find symptoms of gastro-intestinal catarrh. The tongue is usually thickly coated with whitish or brownish fur, through which shows a slight prominence of the papillæ; or it is entirely denuded of fur, glazed, deep red, and beefy-looking. In the more severe cases it may become dry and brown on the dorsum, with slight fissures, somewhat resembling an enteric fever tongue.

Rarely are the bowels regular; constipation is the rule, but diarrhœa, especially in children, is not uncommon, the stools being of the chopped vegetable variety, and often containing later on a good deal of mucus. The gastro-intestinal symptoms are often severe, as in the following case:—

A child of 10, while skating on a small stagnant sheet of water much frequented by wild birds, broke the ice and drank the polluted water. In two days high temperature developed, joints became painful, and a nondescript rash appeared all over the body. It was blotchy in character, much duller in colour than scarlet fever, and erythematous in type between the deeper blotches. In a week the rash had gone, but the illness ran the course of a true rheumatism, all the joints in the body being in turn affected. There was a slight myocarditis, but no endocardial or pericardial affection, and no albuminuria.

Three years later the patient had another attack of typical acute articular rheumatism, accompanied by all the symptoms of acute intestinal catarrh, chopped vegetable stools with mucus casts. On this occasion there were both endocarditis and pericarditis, with great wasting and anæmia. Temperature continued high and irregular for about ten weeks, suggesting ulcerative endocarditis, but fortunately disappearing, leaving the patient with little or no heart mischief. A year later there was an attack similar in every way, unless that the intestinal symptoms were not so pronounced, and the temperature not so high.

The typical nature of the above case may suffice, though it is possible to quote many more cases of distinct gastro-intestinal symptoms in acute rheumatism, but it is seldom that we get such a sudden onset with such a clear cause. Assuming the correctness of the intestinal cause—and I cannot doubt it—and granting also that the organism in both is a streptococcus, it is now necessary to connect the symptoms, complications, and sequelæ with those of scarlet fever. The onset in the two diseases is different. It scarlet it is sudden, and attacks a healthy person in the way an irritant poison would. In acute rheumatism it may be sudden, as in the case above quoted, but as a rule there is a distinct history of some great constitutional disturbance, severe over-exertion, over-exposure, or wetting—in other words, a lowering of vitality. The commonest onset is gradual, the patient is constipated, languid, depressed for some days, and suffers from aching pains all over the body. Then a large joint becomes enlarged and painful, then another, and so on until the disease is fully established. In the first stages the tongue is thickly coated, then clean and red at the tips and the edges, then raw and red as the case becomes acute, while all the time the bowels are usually obstinately constipated.

While differing thus in the onset, there is still a possibility of reconciling the symptoms and regaining common ground. In scarlet fever we are dealing with an organism which is always virulent, or which has become so by passing through various bodies. Many, if not all, epidemics of diseases—such as enteric fever and diphtheria—manifest this increasing virulence, while we have great differences in the virulence of different epidemics of scarlet fever. In each epidemic the cases at the beginning and the end are usually of the mildest type. The lesser infectivity of scarlet as contrasted with measles or whooping-cough, and the more successful prevention of its spread in families, point to its being a swallowed and not an air-borne poison. The premonitory symptoms point to a general intestinal catarrh, and it is almost certain that the excretions from the bowel, the nose, and the mouth are the chief disseminators of the disease. In a malignant case I saw some years ago, the cause was attributed to the return of a child from the hospital after scarlet fever. On the night of its return, while sleeping with its nursemaid, it soiled the bed, and before eighteen hours the maid, who had been previously healthy, died from malignant scarlet fever. The organism in this case had been highly virulent, and had gained entrance to the system of the patient in great quantity. Where virulence in the dose of the poison is less, the degree of gastro-intestinal irritation is proportionately less; but it is invariably present. In rheumatic fever, while the onset may be sudden, for the reason previously given, as a rule the disease develops by the development of virulence in an organism that may previously have lain quiescent in the bowel, *e.g.*, streptococcus fæcalis, before an alteration in the economy has caused an undue prominence of some other micro-organism (bacillus lactis), or the lowering of the general vitality of the body, from some other cause, has rendered its activity possible.

The next question to be decided is the reason why septic disease should not always cause acute rheumatism. We are familiar with the inflammation of practically any mucous membrane being the cause of chronic rheumatic affections, but why any septic poison should not cause acute articular rheumatism is a point of extreme importance. When the umbilical cord of a young animal, like a foal or a calf, becomes infected with septic poison in the raw stage shortly after birth, it is followed by an acute articular rheumatism. The point of entrance here is through the portal circulation, and in the human subject we are led to infer that in every case of acute articular rheumatism the poison has gained entrance likewise through the portal circulation. We have acute septic sore throat followed by peritonsillar abscesses or quinsy, large collections of pus in many different parts of the body, and septic rashes often appearing as the result of these; but in no case do we find these septic processes associated with acute articular rheumatism except in scarlet fever. By the specimens which I have submitted, I think it is clearly proved that in scarlet fever we have a gross lesion of the mucous membrane lining, especially the lower end of, the intestine, which would permit of the passage of septic material directly into the portal tract. In addition, I have found that there is a violent reaction in the test for occult blood in cases of scarlet fever in the early and in the late stages, in septic scarlet cases, and in those complicated by nephritis and rheumatism. In twelve consecutive cases the test for occult blood was positive.

The pathology of acute rheumatism is a much more difficult matter, owing to the infrequency of death during the acute stage, and from the fact that it is usually long afterwards, when all traces of intestinal trouble have vanished, that rheumatism claims its victim; but evidence is forthcoming here, again, that there is a change in the bowel, since in all the cases I have examined of acute rheumatism I have found the test for occult blood positive. The occurrence of ulceration or severe catarrh, as in scarlet fever, would explain the entrance of the septic organisms into the blood-stream by the portal circulation. But though I have been unable to get a specimen of a bowel during an attack of rheumatic fever to prove the presence of ulceration, I show, in Fig. 4, a portion of the lower end of the ileum from a patient who was admitted with high fever and obvious gastro-intestinal symptoms. There was an extensive ulceration of all the soft tissues in the throat, and a culture proved it to be due to the

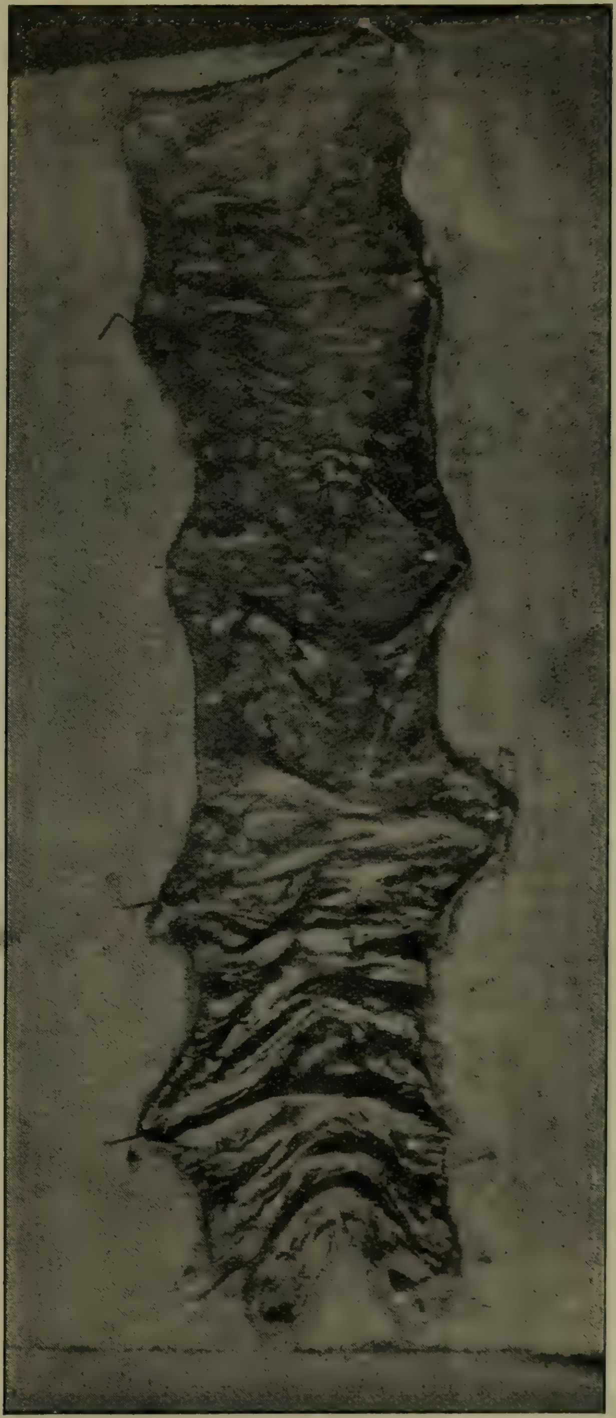

FIG. 4.

Ulceration of the ileum associated with ulceration of the throat due to the staphylococcus aureus.

staphylococcus aureus. The bowel is pitted where the solitary glands have been attacked, and there is ulceration of Peyer's patches. The spleen and kidneys were enlarged and friable, and the liver congested and soft, death being obviously due to septicæmia.

The next illustration is from the bowel of a patient of Mr. Parry who died in the Victoria Infirmary. He was admitted suffering from greatly enlarged and suppurating glands in his neck and abdominal symptoms, which raised the question of enteric. While assisting Dr. T. K. Monro in the Pathological Department in that institution, I prepared under his guidance the accompanying illustration (Fig. 5) from the case, an account of which he published in the *Glasgow Medical Journal* for May, 1895. Here we have an almost exactly similar condition; but the organism which acted as the cause

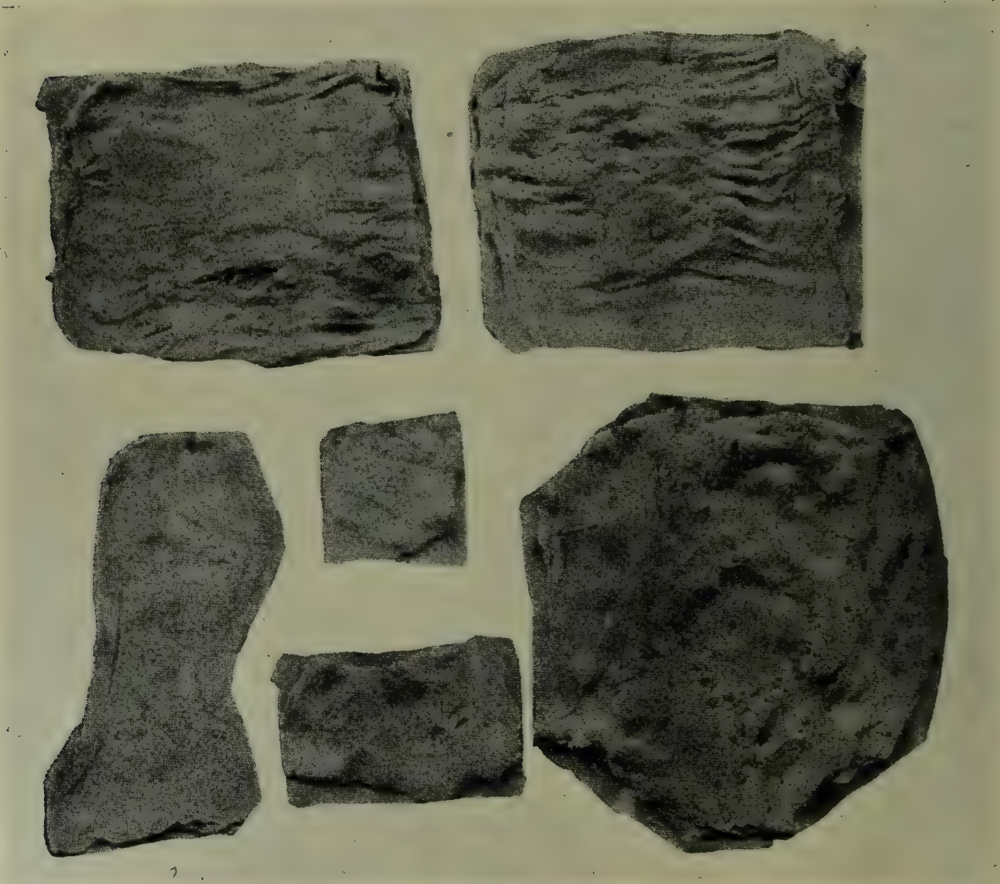

Fig. 5.

Ulceration of Peyer's patches and solitary glands from a case of septicæmia.

was not ascertained. As there was no rash and no articular symptoms it is unlikely it was caused by a streptococcus; but it serves to show, along with the other, the action of a pyogenic organism in the lymphoid tissue of the bowel. Considering the clinical features of a case of acute rheumatism, and the fact that occult blood is found in the stools, I think we can safely conclude that a similar change exists in the bowel of all rheumatic fever cases. In ulcerative endocarditis the presumption is that there is a focus of pus which, in a similar manner, enters the blood-stream direct through the portal system.

The blood changes in these three diseases are the same, there being a polymorphonuclear neutrophilic leucocytosis in each. Between a scarlet fever which has arrived at this stage and a rheumatic fever the difference must be small, since these investigations point clearly to the fact that the bowel is affected in both; the poison generated in both leads to exactly similar changes in similar tissues—synovial and serous—which both preferentially select, and the effect on the blood is exactly alike. So far, we have not mentioned a rash in connection with rheumatic fever; but anomalous rashes are quite common, and vary from a simple erythema to large red nodular swellings, which may extend over both upper and lower limbs, as well as to some extent on the trunk.

In a group of five cases I saw lately, the rash in one appeared upon the upper eyelids; in another, the skin of the neck was so deeply infiltrated as to cause lividity of the face, and a nodular condition in the fore-leg compressed the veins in such a manner as to discolour the foot. Another was sent into hospital as a probable case of osteomyelitis, so dense and livid was the swelling over the tibia. One had small erythematous patches over the greater part of the trunk; and another, two large blotches on the lower limb. In all these cases the temperature was exceedingly high. Four of them continued for weeks, whilst the one with the lividity in the face had a normal temperature after four days, the treatment in this case being large doses of alkalies and large alkaline enemata. The temperature of a rheumatic case closely resembles that of a septic condition, as does that of an ulcerative endocarditis, but in the latter to an exaggerated degree.

From the facts elicited, we may safely conclude that in all these cases we have a septic infection of the lymphoid tissue in the region of Peyer's patches. In scarlet fever the attack is acute, but may be prolonged into a chronic ulcerated conditon, giving rise to a continuous septic absorption into the blood-stream, and causing similar changes to what we find in rheumatic fever. In rheumatic fever we have the slower development of a septic organism, living and propagating in similar tissue, causing similar changes in that tissue, and leading, by absorption therefrom, to the synovial and serous changes which we saw in connection with scarlet fever.

There is another condition which in all probability may be of similar origin, but which is unaccompanied by any of the acute conditions which we see in these two diseases. Chronic rheumatic arthritis in all probability is due to a somewhat similar action, though it causes no rise in temperature. The products of the tissue changes resulting in such a condition are highly acid in character, and, absorbed in small quantities over a long period, are responsible for the destructive changes that take place in the cartilaginous ends of bones and for the poisoning of the nerves, which leads to rapid atrophy of the muscles and loss of power.

We cannot classify the acute articular with the chronic forms of rheumatism. As before stated, we have rheumatism arising from acute catarrhs of many different mucous surfaces. Many are associated with pyrexia, but this pyrexia is not due to the specific germ of acute rheumatism but to the organism causing the disease, *e.g.*, influenza, of which rheumatic pain is a complication or a symptom. In the chronic forms of rheumatism we have no pyrexia, but a toxin absorbed from an inflamed mucous surface, as for example, the rheumatism of the heavy feeder, of the badly fed, of the alcoholic, the rheumatism of gonorrhœa, or that from nasopharyngeal catarrh, &c.

Knowledge of these facts must have a considerable bearing on the treatment of all these diseases, since that treatment must be directed towards repairing the broken down defence of the affected mucous membrane. In scarlet and rheumatic fever, so long as the test for occult blood is positive, so long are we liable to the heart and joint changes which have such an important bearing on the future usefulness of the patient.

By experience, physicians have been led to medicinal treatment which could hardly have been improved upon as regards rheumatic fever. Salicylate of soda is a strong germicide and alkalies are inimical to the growth of streptococci. These given singly or in combination have always a most beneficial effect, but it is questionable if the action of salicylate of soda is in any way specific as regards rheumatic poison. It is more likely that it has been through its germicidal action, especially when given in large doses frequently repeated, that its effects as a preventive against heart complications have been most noticed in rheumatic cases. Knowing that there is an ulceration of the mucous membrane in both these conditions, it is evident that it is desirable to pursue a liquid diet in both cases until we have proof, through the disappearance of occult blood, that the mucous membrane is in a healthy state. In scarlet fever it is possible that the use of salicylate of soda might be of great benefit even from the beginning of the illness—its usefulness in the latter stages being unquestioned. In chronic rheumatic arthritis (deformans) the question of operative interference might be raised as the possibility of removing a hopelessly diseased piece of bowel which might prevent further absorption of the destructive poison. Such is the proposition I set out to prove, and such are the facts I adduce in proof of the fact that the lymphoid tissue in the lower end of the ileum is the seat of the bacterial growths which lead to both scarlet and rheumatic fever, and that while we have other diseases called rheumatism, acute articular rheumatism, whether primary or secondary to scarlet fever, can only be caused by the entrance of the poison through the portal circulation.

TWO FAMOUS LANARKSHIRE OBSTETRICIANS.*

By SAMUEL J. CAMERON, M.B., Ch.B.

Ladies and Gentlemen,—Custom evidently demands that early in each winter session a lecture be given to this Society by a member of the teaching staff of our University or Medical School, and the honour on this occasion has fallen to my share. As I am given to understand that a section of my audience is to be non-medical, I have chosen a subject of general, rather than of purely scientific, interest. I do not propose to enter into details regarding the clinical or scientific discoveries of the two famous obstetricians to whom my remarks are to be devoted; but, in a general way, I shall endeavour to give you some idea of their life and character, and the magnitude and importance of their work.

In the lives of William Smellie and William Hunter there is much which should interest medical students in the West of Scotland. Both were Lanarkshire men, they attained great eminence in the profession, they had numerous friends in and around Glasgow, and, owing to their efforts, the practice of obstetrics was revolutionised. To Hunter we are also indebted for the magnificent Museum which he bequeathed to our University.

William Smellie.

Let us first of all consider the life of Smellie, as he was senior to Hunter; and I take this opportunity of acknowledging my indebtedness for my information to Professor Glaister, who is the author of a most interesting volume dealing with Smellie and his contemporaries. As far as we can ascertain, William Smellie was born in the town of Lanark in the year 1697. The date of his birth does not appear in the Lanark Register of Baptisms; but this is not to be wondered at, as such lists were not kept, or at least carefully kept, at that time. This, however, is the date inscribed on his tombstone in Saint Kentigern's Churchyard at Lanark. Smellie's father resided in Lanark, and married a Miss Kennedy, who was related to the Kennedys of Auchtyfardle. The mansion house of Auchtyfardle, which is situated close to the main Carlisle road on the outskirts of Lesmahagow, is at present being used as a convalescent home for wounded soldiers.

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* Opening address to the Queen Margaret Medical Society, 8th November, 1915.

In all probability Smellie was an only child, and received his education at the grammar school in Lanark. Evidently he was greatly attached to Lanark and also to its school, for we find that early in his professional career he acquired a small property there, to which he eventually retired, and in his will he bequeathed his library to his old school. After leaving school he must have been apprenticed to a medical practitioner, as this was the only way of entering the medical profession at that time. Unfortunately, we do not know with whom he studied, but it is quite likely that he came to Glasgow and assisted a certain Dr. Gordon, as he refers to Gordon as an "old acquaintance," and acknowledges that it was Gordon who directed his attention to the blunt hook.

Smellie started in practice in Lanark in the year 1720, when he was about 24 years of age, and here he carried on a large general practice for at least seventeen years. Lanark at that time was a small town of about 2,000 inhabitants, but round it there was a large agricultural population. Although Smellie had to undertake professional work of all descriptions, it was evident early in his career that he had a partiality for the study of obstetrics, and throughout his life he kept a careful record of his cases. Evidently he must have undertaken fairly serious operations; at least we come to this conclusion from one of his bills in the Register of Protested Bills kept in the Sheriff Court of Lanark. It is a bill drawn by Smellie upon Mr. James Mair of Bankhead, in the parish of Lesmahagow. It reads as follows:—

Lanark, 19 *June* 1723.—Mr. James Mair pay to me or my order betwixt and Lambas nixt, at the house of Thomas Logan, wryter in Lanark, the sume of Seven Pound sterling money, with Twelve Pound Scots of Penalty in case of faillie, being the agreed wages and fee for my pains in the amputation and Cure of your leg, performed by me in harvest last. Make thankfull pay^{t} and oblidge your humble Serv^{t,}

(sic subscribitur) Wil. Smellie.

(Directed thus) To Mr. James Mair of Bankhead.

(Accepted thus) Accepts *June* 19, 1723.

(sic subscribitur) Ja. Mair.

Smellie's life must have been a strenuous one, especially during the winter, in such an upland country. He had long distances to travel on foot or on horseback. We may realise the extent of his practice by consulting his notes, which show that he visited patients at Hamilton and Biggar, the distance between these towns being 26 miles. The remuneration which he received must have been small, as the majority of the people were poor. Wages were low in Scotland at that time, the houses of the peasantry were miserable, so that at the end of many of his arduous journeys Smellie must have received but scant comfort. As an instance of the small scale of wages existing in that district even at a considerably later date, I may state that a farmer in the Upper Ward has informed me that his grandfather, a Lesmahagow stonebreaker, never received a higher wage than 10s. a week. Nevertheless, the people were extremely thrifty, and my informant has also told me of a woman in the village of Glassford, who every week walked barefooted into Glasgow, a distance of 18 miles, with 8 lb. of butter, because she received one penny a lb. more for the butter in Glasgow than in Hamilton.

Despite the smallness of his remuneration, Smellie was able to buy small properties in Lanark before leaving for London. I have already stated that Smellie, for purposes of reference, kept records of his cases in a journal, but his interest was by no means limited to his practice. He was an earnest student, and sought to keep himself conversant with current medical literature. We know that he borrowed books from his distinguished friend, Cullen, who started practice in Hamilton a few years before Smellie left Lanark for London. Although Cullen was considerably junior to Smellie, their friendship only terminated at Smellie's death. Cullen, who was an exceptionally gifted man, was born in Hamilton in 1710, where his father was factor to the Duke of Hamilton. Cullen was apprenticed to a medical practitioner in Glasgow, but, later, voyaged as a surgeon in a West Indian trading vessel. After acting as an assistant in London he returned to Scotland in 1731, and studied medicine at Edinburgh for two winters before settling in Hamilton. The most brilliant of his articled pupils was William Hunter, who entered into a form of partnership with him, part of the arrangement being that during each winter one of them should devote his time to the practice while the other left to study medicine elsewhere. Accordingly, the first winter was spent by Cullen at Edinburgh, where he, with others, was instrumental in founding the Royal Medical Society. Hunter left during the following winter for London, and found the enticements of that city so attractive that he communicated his desire to settle there to Cullen, who generously cancelled the articles of partnership. Cullen, at a later date, settled in Glasgow as a physician, where he worked earnestly to establish a medical school, as he deplored the lack of a regular course of medical study. He was appointed to the Chair of Medicine in the University of Glasgow, but after discharging the duties of the Chair for four years he went to Edinburgh University, where he occupied the Chairs of Chemistry and Medicine. He died in his seventy-ninth year, but he remained actively interested in medical teaching till within a few months of his death.

Smellie became a member of the Faculty of Physicians and Surgeons of Glasgow in May, 1773, and ever afterwards he maintained his connection with the Faculty by paying certain dues called "quarter accounts," although he need not have done so after his departure from Lanark, which took place in the year 1739. When Smellie reached London he was disappointed at the methods employed in teaching obstetrics, so he proceeded to Paris and studied under Grégoire. He does not seem to have had an exalted opinion of the French teaching either, as he very soon returned to London and settled in Pall Mall. It was to Smellie's house in Pall Mall that William Hunter came on leaving Hamilton in the year 1741. Doubtless, Hunter was advised to do so by their mutual friend, Cullen. Two years after leaving Lanark, Smellie started teaching obstetrics in London, and there is no doubt that capable instruction was urgently required, as obstetrical practice was for the most part conducted by ignorant women. Smellie's teaching met with almost immediate success, and a large number of students of both sexes came from all parts of the country to attend his lectures. The increased number of students necessitated a removal to more commodious premises, and consequently he took up residence at Gerrard Street, and later at Wardour Street. He designed extremely clever models for use in the lecture room, and in order to give his pupils clinical experience, he started a large obstetrical practice among the poor. His influence extended from his pupils to the general public, whose interest was aroused to such an extent that soon afterwards the chief London obstetric charities were established. In 1751 he published his Treatise, which was very favourably received. Another of his important works appeared in 1754, and it is interesting to note that he was assisted in the composition of his Treatise by Tobias Smollett, who was one of Smellie's most intimate friends, and this may partly account for the excellency of his composition. Perhaps the friendship may have been due to Smellie's acquaintance with Dr. Gordon, of Glasgow, with whom Smollett served his medical apprenticeship. In the year 1766 Smollett visited Lanark, where Smellie's widow was residing. Smollett's health at this time was far from satisfactory, and he died five years later at Leghorn.

It must not be supposed that Smellie's successful career, as a teacher, continued without opposition. Pamphlets contributed by male and female scribes appeared, and at the present day it is difficult to understand the state of mind of a community which could countenance such scurrilous attacks. Smellie never condescended to reply to any of them, but his defence was ably maintained by some of his pupils. The arduous nature of Smellie's existence told on his general health, and consequently about 1759 he relinquished his practice in London and returned to Lanark. Smellie before his departure for London had bought a small property on the outskirts of his native town, and he added to it by purchasing an adjacent portion of land, the whole constituting the estate of Smellom, which was probably so named after its owner. The name was afterwards changed to Smyllum, and the property is now the settlement of the well-known Roman Catholic Orphanage.

Professor Glaister found on the flyleaf of William Hunter's copy of Smellie's Treatise the following note, which is probably in Hunter's own handwriting:—"The Author died of an Asthma and Lethargy at his House by Lanark in Scotland in March, 1763." One would have imagined that Smellie, after his retiral to Lanark, would have been glad to spend the remainder of his life in idleness; but such was not the case. He busied himself with his notes and in the preparation of his third volume. In the preface of the second volume he states "the other part was almost compleated, and though I should not live to see it in print, will certainly appear to fulfil my scheme and promise to the publick." The matter was written up and the manuscript had been sent to Smollett, but before the work was published Smellie died in March, 1763, at the age of 66. He was buried in his father's grave close to the old kirk of St. Kentigern at Lanark. It is almost impossible to estimate the great value of Smellie's services to obstetrics. For forty years he devoted his time and energy to the study of this subject, and by careful observations placed before the profession valuable clinical facts. At the same time he completely changed the methods of teaching obstetrics, and by educating pupils in a practical and scientific manner he raised a multitude of competent medical attendants, who went forth untrammelled by many mediæval superstitions to practise this art for the benefit of humanity. Smellie's regard for his old school is evidenced in his will, for he directs that—

> I Dr. William Smellie for the regard that I have for the School of Lanark, bequeth to the same all my Books, Mapps, and Pamphlets, except those of Medicine Surgery and Pharmacy for to begin a Liberary there. Also I bequeth Two Hundred Pounds Sterling for repering the School House, according to a Plan I have left.
>
> (Sgd.) WILLIAM SMELLIE.

Smellie must have been fond of music, for he bequeathed to the "School of Lanark 9 English Floots with the thick quarto gilt Musick Book." To his nephew he left his violoncello and Oswald's Scotts Tunes. To another friend he left the Consort Organ and Handel's Opera Songs. One friend received a Bass and Consort Floot, while another was given a German Floot and Thomson's Sets Songs. Dr. John Harvey received two

German Floots with some Musick Books. Smellie desired that his medical books should be at the disposal of the medical practitioners in Lanark, so that they might consult them in the event of "extraordenar emergencys," but I quite agree with Professor Glaister that the passage of time has led one to raise the question whether this valuable library, which is purely now of antiquarian interest, is not being wasted by remaining in Lanark. The Faculty of Physicians and Surgeons in Glasgow some years ago approached the School Board of Lanark, and offered to accommodate the books in special cases in the Faculty library, but the Board did not see its way to consent. It seems to me that the proposal made then should be renewed. Every effort should be made to bring this library to the Faculty, as it is an institution with which Smellie had a long association.

Smellie's portrait, painted by himself, hangs in the hall of the Royal College of Surgeons in Edinburgh. It was presented to the college by John Harvie, W.S., Edinburgh, the donor being a son of Dr. Harvie, who succeeded Smellie in London.

WILLIAM HUNTER.

William Hunter was born on 23rd May, 1718, at Long Calderwood, a small estate situated 7 miles from Glasgow, and about a mile from the village of East Kilbride. The original estate of the old Scottish family of the Hunters is at Hunterston, near West Kilbride, the present representative of the family there being General Hunter-Weston, who was recently engaged in directing operations at Gallipoli. Several centuries ago a branch of the family left West Kilbride in Ayrshire and settled at East Kilbride in Lanarkshire. William Hunter's father, who was proprietor of Long Calderwood in the early part of the eighteenth century, married a Miss Paul, of Glasgow, and had ten children, of whom William was the seventh; five of the family died in childhood. The land on Long Calderwood was farmed by Mr. Hunter. William was sent to the parish school, but at the age of 13 he began his studies at the University of Glasgow, where he remained for five years. It was his intention to devote himself to the study of divinity, but, fortunately for the science of medicine, he relinquished this idea. He received an excellent education at the University, but, nevertheless, when the post of schoolmaster in his native parish became vacant, William Hunter applied for it without success.

About this time he met William Cullen, of Hamilton, and this meeting must be regarded as a most fortunate event, as Cullen imbued Hunter with that love for science which became almost a ruling passion with him. Cullen induced Hunter to remain in Hamilton as his partner, and for about three years he stayed with Cullen there. I have previously mentioned that it was their intention to attend medical classes during alternate sessions, but Hunter, after attending Dr. Alexander Monro's lectures at Edinburgh University in 1740, proceeded to London and settled there about a year later. On his arrival in London he resided with Smellie at his house in Pall Mall.

While Hunter was a student at Glasgow the two brothers Foulis were printers to the University. The brothers Foulis produced work of the highest quality, and by attempting to found an academy in Glasgow for the study of the fine arts, they succeeded in dispersing the greater part of their fortune. Robert Foulis was an intimate friend of William Hunter, and doubtless it was from Foulis that Hunter, comparatively early in his career, developed that exquisite appreciation for the fine arts which ever afterwards remained a prominent feature in his character. Possibly it was through Foulis's influence that Hunter, soon after settling in London, became acquainted, and eventually friendly, with Reynolds, Gainsborough, and Hogarth. Robert Foulis also introduced Hunter to Dr. James Douglas, a Scotsman, who was engaged on a work of osteology at that time. Hunter, by his professional skill and charm of manner, so pleased Douglas that he sought his assistance in the work, and eventually he invited him to become tutor to his son. Before accepting this proposal, Hunter sought the advice of his father and William Cullen on the matter. Cullen told him to accept it, but his father, with true Northern caution, penned the following note to his son :—

> Nothing has proved a greater comfort than the hopes of seeing you here soon, but your letter has cast a very great damp upon us all. I think you must have been in a very extraordinary manner obliged to Dr. Douglas, and whatever opinion I may have of his present offer, or however unwilling I may consent to it, still I must thankfully own it as a particular instance of his kindness to you. I surely must soon

expect to be beyond this side of time, considering my age and present indisposition, being for some days past confined to my bed with sickness and a severe fit of the gravel, and would be glad to have you near me for the little while I shall be in this world, though, at the same time, I should be sorry to hinder you from making your way in the world the best you can. I wish you to consider well what you do. With Dr. Cullen you may be very comfortably settled and make money, and if you miss this opportunity now you cannot be sure of it another time. Dr. Douglas's kind offer is only for a time. He may die before you come home or are settled, and leave you without friends at a great enough uncertainty. I suppose now you know very well the difference between the expense of living at home and abroad, and that perhaps clothes and pocket-money may cost you more than your whole expense at home would do. You know my willingness to assist you, but you know, too, that already I have gone fully as far as my numerous family will allow of. You must now do something for yourself. Consider all these things, and if you can persuade me that it is for your good I will not be against it.

It is quite clear from this note that the old man was extremely anxious for the welfare of his son, but a few months after it was written old Mr. Hunter died at Long Calderwood at the age of 78. By Dr. Douglas's influence, William Hunter became a surgeon pupil and dissector at St. George's Hospital, but Douglas did not live long after Hunter came to him. There is a letter from William Hunter to his mother announcing Douglas's death. It reads as follows:—

Dear Mother,—Jamie [one of Hunter's brothers] and I have both great comfort from your letters, and we hope you 'l continue to write often yourself and influence our sisters to follow your example. Jamie approves of your conduct very much, and returns you the inclosed which he has subscribed. If I could have thought that Dr. Douglas' death would have come to your ears so soon, I should have prevented the fears you may have had on this occasion. 'Tis in vain to say that neither Jamie or I are losers by the accident; but still we are in a very good way. Jamie is just falling upon a way of supporting himself here in London honestly and genteely; and at last I 'm perswaded will be able to do something honourable to himself and reputable to his relations. Those who have been his friends in Scotland will, 'tis hoped, in a few years rejoice with him, and if he had any ennimys 'tis to be fear'd that their own hands and a halter will become their onely surviving well-wishers.

You 'l no doubt wish to hear of my affairs, and to satisfy you I 'll be a little particular. Tho' Dr. Douglas during his short sickness minded his worldly concerns but little, yet he died not without recommending me warmly to his family. No friends or relations were admitted to see him, his fever being tumultuous and precipitant, and leaving him onely a few intervals of ease or tolerable composure of mind. During the last of these I received orders from him of being in the way, and that he wanted to speak with me as soon as his head was a little settled. But immediately I had another message telling me he was worse and must defer seeing me. This was the night before his death. Early next morning I was call'd at his desire, when he thought himself pretty easy. I went in, he snatch'd my hand, and spoke a few words with too great affection for his giddy disorder. Immediately his fancy wander'd, and tho' he could not talk sensibly, yet he still knew me, and would not let me go out of the room. I sat on his bed till after noon, when he expir'd with his hand locked in mine. At his death I had mournings and a Ring from Mrs. Douglas. Then I was told that on his death-bed he acquainted the family that I should go to Paris, and that I must go. At present I sleep and eat with the young Dr., his son, and in Harvest I go to France with him, if a war does not prevent our intention for one season. I have the happiness of being aggreable to the whole family as far as I can guess by their behaviour. After I come from Paris I have a scheme laid out of settling here, and certainly nobody can say that it will not succeed. But I 'll say no more of projects lest you think me a Castle builder.

I 'm heartily concerned for my little dear sister Tibbie, but I hope the mare's milk and the Fole together will surely recover her, for you know she likes Foles and Calfs. Tell her she must write me about the White Hamilton Stork, and that Jamie and I will pay her a visit as soon as we have got our pockets full of Gold to buy her a country seat, and give her what horses or other things she wants. My Brother and I remember you all with great love.—I am, Dear Mother, Your affectionate Son,

(Sgd.) William Hunter.

London, *June 3rd*, 1742.

This note, together with the following, shows how attached and thoughtful Hunter was of the other members of his family:—

(*Addressed to Mr. James Hunter, Longcalderwood. To the care of the Post Master of Hamilton, North Britain.*)

Dear Jamie,—'Tis now after dinner, I have a great deal to do, and we take Coach to-morrow by 4 in the morning, so you have as little reason to expect a connected Letter as a short one. . . . I have not time for endeavouring to be humorous, tho' I know you have a great Gusto that way; but faith, that is what I make as little progress in as drawing; I like both and think both easy, but when I attempt either, I throw aside my pen or pencill, and snuff as voraciously as James Warnok's Wife would swallow meal, seed and all, out of another person's pock at the Mill. But to dispatch, I have just received a letter from dear Dr. Cullen which gives me a deal of concern, and indeed so much that I wish it had miscarried. I heartily pity him, and wish him all happiness, but am sorry I can neither help nor well advise him; but pray comfort him. As to yourself, I beg again and again that you will persecute your studies with resolution and never fear the event. I cannot learn why you throw Monro out of your scheme. I really think his a good course, and so fit for you that I would by no means have you neglect it, except you cannot otherwise attend enough to Pharmacy and Surgery which are truly the chief points. As to all my friends in Scotland, especially in Longcalderwood and Glasgow, let them know I pray for them and that they ought to pray too for me, and my prosperity in the world; because I shall always think it the happiness of Riches to support Relations; not only to assist them, but make them sharers in the greatest prosperity. May God for their sakes second my endeavours! But to leave off writing, tho' I shall never cease thinking of my dear Mother, Sisters and Brothers, let me now tell you something of my own affairs. . . . I have taken leave of all the great men with a deal of satisfaction, and indeed I have the pleasure of thinking that every soul of my acquaintance wish me well and would be ready to serve me, at least I have of late had many protestations and some examples of this kind. My dear Jamie, you who know that my duty is to communicate all to you, will excuse my freedom and attribute nothing of this to vanity. The kindness that I have met with in this family of late is infinitely more than I deserve and a great deal more than I expected. In your prayers put in a word for good Mrs. Douglas. I need not mention particulars but everything will be to my wish. But as I have now given you my past History I must now let you into my views after I come home. I need not tell you that John Douglas died about 2 months agoe, and communicated his knowledge in the cure of venereal disorders to Dr. Owen, who managed all his business in that way during his Illness and has carried it on since his Death for the Widow's benefit. This gentleman you know married Dr. Douglas' Dau$^{r.}$ As he was not capable for the surgery part and wanted to be in the country during the summer seasons, he choosed to have a partner. The offer was made me, and after consulting Dr. Armstrong, Mr. Smellie, and my own inclinations, I accepted of it. . . . I thought it the only way to settle in my darling London, to give Lectures and be useful to you or Jockie. . . . The proposals are that we keep John Douglas' house, which Dr. Owen is to go into this Winter, and I am to succeed him in the Spring, when he goes out of Town. The house is to be fitted up with Dr. Owen's own furnishing, so that I shall be at no expenses on that score, and he is to have a footman at his own expense likewise. The houserent, Taxes, and maidkeeping, which will come to £60 per an., is to be a common burthen, as are Medicines, &c. On the other hand all the profits are to be equally divided, and if the profits of the first year do not discharge the expenses I am neither to receive nor pay; so that upon the whole I think I am upon a very good footing. I have no more time and therefore can neither tell you what friends desire to be remembered to you nor what Blessings I send to you all. Once more let me pray for all happiness to the dear family, and then farewell.

(Sgd.) William Hunter.

London, *Sept.* 17*th.*

As Hunter was determined to become a teacher of anatomy in London, he set about preparing large numbers of anatomical specimens, and at the age of 25 he made his first communication to the Royal Society, his subject being on the structure of the synovial membranes. About this time a society of naval surgeons met in Covent Garden to receive instruction in surgery from a Mr. Sharpe, who found himself unable to complete the course. Hunter was invited to take his place, and so successfully did he perform the duties that he was requested to teach anatomy. It can be readily understood that Hunter was not slow to accept an invitation of this description. In order to gain additional experience he went to Leyden, in 1748, and visited Albinus, the famous anatomist. The preparations he saw were a revelation to him, and when he came back he at once adopted the method of injecting blood-vessels which he had seen there. Soon after his return to England, his brother John arrived in London. John eventually became the most famous anatomist, physiologist, and surgeon in the whole history of medicine, and this is all the more remarkable when we recollect that John Hunter neglected his early education to such an extent that at 17 he could neither read nor write. After being a carpenter in Glasgow for three years, he joined his elder brother in London. William, while appreciating his brother's solid worth, at once recognised that John's defective education would handicap him in practice. In order to remedy this disadvantage, he got John to enter at St. Mary's Hall, Oxford, as a gentleman commoner. Evidently it was William's intention to make John a physician, but John had no desire whatsoever to be either a physician or a classical scholar. Just as William was determined to be an anatomist, so John was equally resolved on practising surgery. It is related that John, commenting on his brother's designs for his career, remarked—"They wanted to make an old woman of me, or that I should stuff Latin and Greek at the University, but these schemes I cracked like so many vermin as they came before me."

It was not long after John had started as a dissector in his brother's rooms that William began to attain fame as an obstetrician. Doubtless he was greatly influenced in the choice of this subject by his friends Smellie and Douglas, both of whom had large obstetrical practices. In 1748 and 1749 he was appointed surgeon-accoucheur to the Middlesex Hospital and to the British Lying-in Hospital. In 1750 he became a graduate of the University of Glasgow, and in the following summer he visited Long Calderwood in company with Cullen. Perhaps he may have made this visit to the north on account of the unsatisfactory state of his mother's health, as she died in November of the same year. This visit to Scotland, and his visit to Leyden, were the only two holidays he took in the course of his career. He was extremely fond of London life, but that his early attachment to Long Calderwood never abated is evidenced by the fact that when he succeeded to the property he gave instructions for its improvement, and also directions that any adjacent land might be purchased if it came into the market. Bearing this in mind, one might wonder at his entering into negotiations for the purchase of an estate near Alloa, which had been looked out for him by Cullen and Baillie. This was ten years before his death, and the purchase would have been completed had not Hunter's counsel in London advised him against it owing to some defect in the title deeds. In all probability Hunter had become so accustomed to the conveniences of London life that he recognised that vast improvements would have to be made on the Long Calderwood property to convert it into a congenial residence. Accordingly he may have thought that he would be wiser to enter into possession of an estate requiring few alterations.

When Hunter returned from Scotland he went to live in Jermyn Street, and before long he acquired the best obstetrical practice in London, and among his patients was Charlotte, Queen of George Third. He began his great work of obstetrical anatomy, which took thirty years to complete, but he experienced great difficulty in limiting his practice in order to devote time to research work. His interests, however, were not limited to obstetrics. He was devoted to natural history, and in 1767 he became a Fellow of the Royal Society, to which he contributed an article on observations on bones found near Ohio. These bones had always been thought to be those of the elephant, but Hunter expressed the opinion that this was not so, but that they belonged to an extinct species. His surmise ultimately proved to be correct, the bones being those of the mastodon of Cuvier.

His museum was now growing rapidly, and he added to the natural history portion of it the collection he had acquired from Captain Cook. At the same time he was purchasing rare books, coins, and works of art.

Hunter, from early in his career, had a strong desire to establish a school of anatomy in London, and so strongly did this scheme appeal to him that he approached Lord Bute, the Prime Minister, with the object of procuring ground from the Government so that he might erect a building which would accommodate his museum and also serve as an anatomical school. The Imperial exchequer was evidently as low then as in our time, and consequently Hunter's application was refused, although he was willing to spend £7,000 on the buildings and also endow a chair of anatomy. Hunter must have been disappointed at the failure of his scheme, but with the money he erected a house in Windmill Street. A lecture room and dissecting room were contained in this building, and for three-quarters of a century the anatomical theatre in Great Windmill Street remained the foremost teaching centre of anatomy.

It was a fortunate thing for Glasgow that Lord Bute could not manage to grant Hunter his wish, as it was the means of

Hunter bequeathing his museum to his old University. I have heard that Hunter may have done so at the suggestion of Dr. Samuel Johnson, with whom he was on terms of friendship. London, however, was fortunate in acquiring the museum of his brother John, whose collection forms a very important part of the museum of the Royal College of Surgeons. The museum of the Hunters' nephew, Dr. Matthew Baillie, is included in the museum of the Royal College of Physicians in London. Dr. Matthew Baillie, who was born in the manse of Shotts, was a son of a former Principal of our University, who had married a Miss Hunter. Matthew was a brother of the poetess, Joanna Baillie, who was born in Bothwell manse. He succeeded to William Hunter's practice, and for over twenty years Joanna lived with him in London. Afterwards Joanna and her sister took a house in Hampstead, in which she died at the age of 98. Matthew was educated at Glasgow and Oxford, and became an excellent anatomist and physician. He was a physician at St. George's Hospital; he accumulated a considerable fortune, bought an estate in the South of England, and died there at the age of 62.

Academic distinctions were now bestowed upon William Hunter. He became President of the Royal College of Physicians and an associate of several foreign medical societies. Unlike his brother John, he was a fastidious and elegant gentleman, possessed of charming manners, and a most brilliant gift of lecturing; yet he resembled John, inasmuch as he was a tireless worker. It was at the close of an introductory lecture on operative surgery in March, 1783, that he first showed signs of his fatal illness. He lost consciousness for a short time, and next morning he informed his medical attendant, Dr. Coombe, that he had had a paralytic seizure during the night. His physician besought him to regard his fears as groundless, owing to the fact that his speech was unaffected and he could raise himself in bed. Later, however, it was obvious that Hunter's suspicion was correct, and he died on 30th March, 1783. It is narrated that shortly before his death he turned to his physician and friend, Dr. Coombe, and said, "If I had strength enough to hold a pen, I would write how pleasant and easy a thing it is to die."

All of us must derive considerable satisfaction from the fact that the brothers, who had quarrelled regarding the priority of a certain anatomical discovery a few years before William's death, became reconciled during his fatal illness. William did not mention John in his will, and bequeathed Long Calderwood to his nephew, Matthew Baillie. His museum also devolved upon his nephew in liferent, but Baillie, with characteristic generosity, renounced his claim, and in 1807 the museum was transferred to Glasgow. In order that the collection might be suitably housed, William Hunter left £8,000 for the erection of a building. The selected site was on the east side of the third and last quadrangle of the gardens of the old College in the High Street. The building was a handsome one, and, in a general way, was of classic design; the front formed a Roman portico.

Probably never before or since has such a magnificent collection been made by a single man. On viewing it, one immediately becomes aware of the fine appreciation possessed by Hunter for books, pictures, and coins. Among the pictures are examples of Rembrandt, Titian, Chardin (by whom there is a charming one of a woman at tea), Joshua Reynolds, Raeburn, and many others. The coin and medal sections are exceedingly valuable, and before their removal from London the trustees of the British Museum (which also, by the way, was founded by a medical man, Sir Hans Sloane) offered £20,000 for the first and second series alone, and to return all duplicates, together with casts of the originals which had been kept. The books number over 12,000, with examples of almost every press since the introduction of printing. Almost every work in classic and foreign literature known to exist previous to the sixteenth century is contained in this collection, so we must be considered fortunate in having fallen heir to the museum of this illustrious graduate of our own University.

The brief sketch which I have given of William Hunter's career is chiefly based on material contained in Mather's and Stephen Paget's excellent volumes.

THE ACTION OF MEDICINAL DOSES OF LEAD ACETATE.

By FRANK CHARTERIS, M.D.

In the first half of the nineteenth century lead salts were extensively used internally as remote astringents. Thus they were largely used in the treatment of hæmoptysis. In the course of time it was found that the lead salts possessed no activity as astringent drugs after absorption, and their internal use has practically ceased. They are seldom given internally for any other purpose than to control diarrhœa and the hæmorrhage which occurs in typhoid fever. For this limited field lead, especially if combined with opium, is often a very potent remedy, and frequently acts when opium alone entirely fails to check diarrhœa.

As a general rule, one seldom continues its administration for more than a few days, and thus there is little risk of sufficient of the drug being absorbed to induce toxic symptoms. I have only once noted any evidence of lead absorption from the lead and opium pill used for the relief of diarrhœa. In one of our cases, after the administration of four opium and lead pills, a woman suffering from diabetes and diarrhœa developed a well-marked blue line on the gums.

The lead salts are still occasionally used in chronic albuminuria and hæmaturia, and as in these conditions the administration is usually maintained for a longer period than in the treatment of diarrhœa, there is more risk of absorption, and the earlier evidences of lead poisoning are by no means infrequent.

The treatment of chronic renal albuminuria and hæmaturia is so unsatisfactory that the clinician places little faith in any drug. When working in Dr. Stockman's wards in the Western Infirmary, Glasgow, I saw many drugs tested in these troublesome conditions; among others lead acetate was tested on a fairly large scale. I paid some attention to the general effects produced by the drug, and recently thought that it might be as well to collect the observations and investigate the therapeutic action.

When a drug is only occasionally used over a period of several years one gets a rather confused notion of its action, and it is then a good plan to collect the scattered records and contrast them. For this purpose I have collected some twenty cases in which lead acetate was used to control either albuminuria or hæmaturia. My impression that lead was a remedy of little value has been confirmed by the collection of the records; still I was rather surprised to find that in a certain number of the cases hæmaturia seemed to have been removed by its use.

One of our experiences was rather unfortunate, and directed my attention forcibly to the danger of lead producing poisoning even in comparatively small medicinal doses. A man, suffering from chronic nephritis, with polyuria, albuminuria, and slight hæmaturia, was treated with lead acetate in the hope that it would diminish or remove the hæmaturia. He was given pills containing 2 grs. of lead acetate, which were administered thrice daily. He continued their use for eighteen days, taking in all 108 grs. of lead acetate. The hæmaturia diminished, and for two days disappeared entirely. The lead pills were stopped on the eighteenth day, and three days afterwards the patient began to suffer from well-marked lead poisoning. He had severe colicky pains in the abdomen, was constipated, had a foul breath, and a blue line developed on his upper and lower gums. There was no wrist drop, and no special anæmia, but the colic and constipation persisted off and on for eleven days.

Thus early rendered alive to the possibility of lead poisoning from the use of medicinal doses of lead salts, I took notes in most of the cases to detect the earliest symptoms of lead action. By far the earliest symptom is the presence of stippling (basophilic staining) of the red blood corpuscles.

It is easily recognised microscopically with the oil immersion lens, and seems to be indistinguishable from the stippling seen in pernicious anæmia and leukæmia. Probably in all cases stippling indicates a regenerative change on the part of the bone-marrow. It is no longer thought to be a degenerative change in the red cells, but seems to be a regenerative change in which the red cells tend to revert to the more embryonic type seen in infants. The next evidence of the accumulation of lead in the system is usually the development of a blue line on the gums. It is well known that lead is deposited after absorption through the action of sulphuretted hydrogen generated from decomposing food. It is said to be more rapidly developed in patients who fail to keep their teeth clean than in those who are particular in looking after the teeth. I am not able to criticise this statement, as it so happened that the patients in whom the line developed were all fairly particular about cleansing their teeth, and I had no opportunity of studying the question in patients with bad teeth. The blue line will eventually develop in those whose gums and teeth are sound, even if they are kept entirely on a milk diet. It is said that meat eating, in contrast to vegetarianism, tends to hasten the development of the blue line, and in the case of rabbits fed with lead carbonate till well-marked lead poisoning occurred there was no development of a blue line.

The amount of lead acetate which produced the blue line varied very much in different patients.

I have already mentioned the case of the diabetic, who showed the blue line after four lead and opium pills. Other patients developed the line in the following times:—One showed it after taking 3 grs. of lead acetate for nine days, equal to 27 grs.; two patients showed it in twelve days, equal to 36 grs. of lead acetate; in other instances it was much slower to appear. Though the same dosage of the acetate was employed it did not appear till 42, 60, and 128 grs. had been taken. A similar variation in the time of onset and quantity of the drug was noted by Burton, who described the blue line in plumbism. Thus, in one case 15 grs. given in four days produced a marked blue line and severe colic. He also saw the line appear in four days after using 24 grs., and after 21 grs. in seven days, but some of his patients required much larger quantities. One patient took 96 grs. in eleven days without showing the line, and one patient required as much as 160 grs. to produce it. This man must have been rather refractory to lead, as he took 135 grs., after the line appeared, in the following twelve days (in all, 295 grs. in thirty-three days), and did not suffer from colic. Burton says that other patients took 228 grs. in twenty-five days, 116 grs. in thirteen days, 136 grs. in seventeen days without suffering from colic. It is clear from his records that there is a very fair margin left for safety after the line develops. The patient who showed the line after 96 grs. in eleven days subsequently took other 112 grs. in the next fourteen days before producing slight abdominal pain.

Apart from the effect upon the blood and gums, lead in small medicinal doses of 1 gr. or 2 grs. three times a day does not produce much action. It is not particularly liable to produce constipation; many of the patients showed considerable looseness of the bowels while taking lead. These doses seem to have no action on the respiration, but a distinct slowing effect is produced upon the heart. This was well seen in several of the cases. The blood-pressure, in the few cases of which I have records, was increased under lead treatment.

The therapeutic results were rather uncertain, but in five out of eleven cases showing albuminuria and hæmaturia the blood disappeared entirely from the urine during the administration of lead. In three cases the hæmaturia increased, and in the remaining three cases no effect was produced upon the symptom of hæmaturia.

The effect upon albuminuria does not seem so satisfactory. In only one out of the eleven cases did the albumen cease entirely under the action of the drug. In this instance, a woman, suffering from acute nephritis for four weeks, passed urine which constantly contained albumen. The average daily excretion of albumen, measured as grs. of dried albumen, was respectively 6·2 grs. in the first week, 4·6 grs. in the second, 7·9 grs. in the third, and 8·1 grs. in the first half of the fourth week. In the last three days of the fourth and in the fifth week, while receiving 1 gr. of lead acetate thrice daily, the albumen entirely disappeared. In another case the patient suffered from subacute nephritis, and for three weeks took stypticin without much benefit, constantly passing albuminous urine. In the fourth and fifth weeks under lead acetate the albumen diminished considerably, and on stopping the lead and resuming stypticin in the fifth week the albuminuria increased again. The following table briefly summarises the effects of the drugs:—

Weeks,	I.	II.	III.
Daily average of urine,	60 oz.	73 oz.	73 oz.
Daily average of albumen,	66 grs.	46 grs.	45 grs.
Treatment,	Stypticin, 1 gr. t.i.d.		Stypticin, 2 gr. t.i.d.

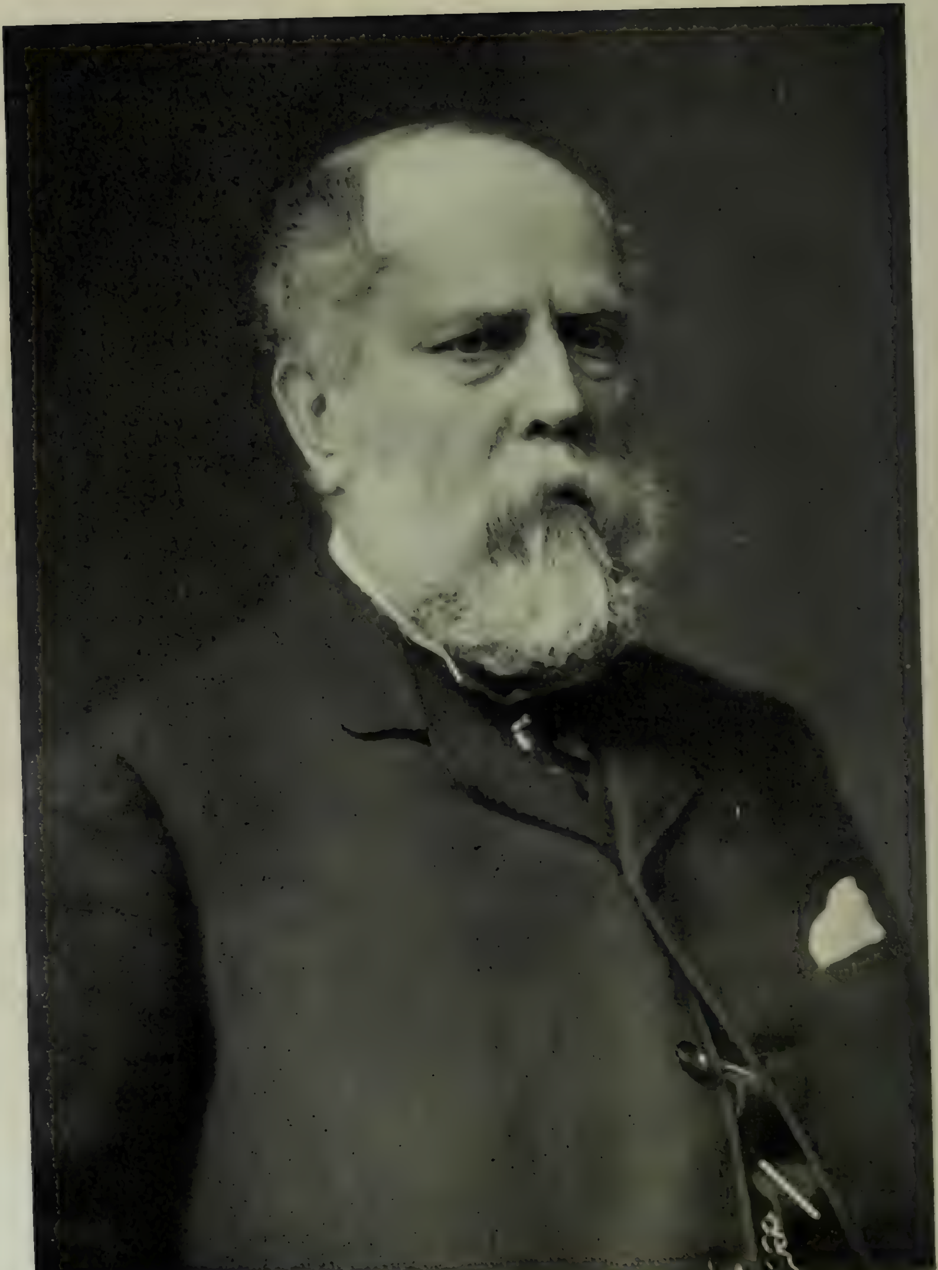
Weeks,	IV.	V.	VI.
Daily average of urine,	58 oz.	79 oz.	68 oz.
Daily average of albumen,	34 grs.	29 grs.	40 grs.
Treatment,	Lead acetate, 1 gr. t.i.d.	2 gr. t.i.d.	Stypticin, 1 gr. t.i.d.

During the last two days of the lead administration the urine, previously always with a trace of blood, became free from blood, but on resuming stypticin the blood reappeared.

In four cases no effect upon the albuminuria was observed, but in two cases the albuminuria increased under lead from what it had measured under treatment with potassium acetate and citrate. The result in one of the cases was as follows:—

Periods of five days,	I.	II.	III.
Daily average of urine,	75 oz.	74 oz.	83 oz.
Daily average of albumen,	13·6 grs.	17·2 grs.	24 grs.
Blood,	Trace.	Trace.	Trace.
Treatment,	Pot. cit. and pot. acet.	Lead acetate, 2 gr. t.i.d.	

I may summarise my impressions as follows:—The most constant effect produced was upon the hæmaturia. In eight out of eleven cases it was influenced—in five cases it was removed, and in three cases it was increased; in the remaining cases no effect was produced. Lead acetate is obviously not a drug which can be indiscriminately recommended in chronic hæmaturia and albuminuria. In about half the cases it is of benefit, but it seems impossible to foretell what case will benefit. Even in medicinal doses there is a risk that plumbism may be induced, and it is therefore inexpedient to administer the drug for longer periods than two weeks, and the dose should not exceed 2 grs. thrice daily.



ALEXANDER MACGREGOR BUCHANAN, M.D.

Obituary.

ON SERVICE.

Lieutenant FERGUS HAY YOUNG, M.B. Glasg., Royal Army Medical Corps.

We regret to announce the death of Lieutenant F. H. Young, R.A.M.C., attached to the 29th Division of the Ammunition Corps, who died of the effects of exposure following the sinking of the transport *Marquette*, torpedoed in the Ægean Sea on 23rd October. Dr. Young was a brilliant student of Glasgow University, where he took the degree of M.A. in 1907 before he was 20 years of age, and those of M.B., Ch.B. four years later. After the completion of his medical course he practised for some time in England, and then went to New Zealand, where he worked among the Maoris for more than a year. On enlisting in the Royal Army Medical Corps he was sent to the Dardanelles, and there, though he never landed, he was frequently under fire. Subsequently, he was in Egypt, serving for three months in the desert outside Cairo among the troops suffering from dysentery, and he left Alexandria on board the *Marquette*. He was the youngest son of Mr. John Young, Fernbank, Kirkintilloch.

ALEXANDER MACGREGOR BUCHANAN, M.D. Glasg., F.R.F.P.S.G.

By the death of Dr. Alex. M. Buchanan the cause of extramural medical teaching in Glasgow has lost one of its chief supporters, while the loss to the Anderson College of Medicine, where for the last forty-one years he acted as Professor of Anatomy, is simply incalculable. Other professors and lecturers might come and go, adorning its class-rooms for a few years till they were provided for elsewhere; but Dr. Buchanan was a fixture. His name became as well known as that of the College itself, and admiring students, infected by the reports of their predecessors, came in numbers every year to study anatomy in his rooms. He had a great reputation as a teacher of anatomy, and he well deserved it. He had a long and varied training for the post he so long held and adorned.

Born in 1844, Dr. Buchanan was educated at the High School, Glasgow, was dux of the junior division of the late Dr. M'Kindlay's Latin class, 1855-60, and captured all the first prizes and medals open to him. He entered the University of Glasgow in 1860, graduating in Arts in 1864, taking the degrees of M.B., C.M. four years later, and that of M.D. in 1871. In 1874 he became a Fellow of the Royal Faculty of Physicians and Surgeons, and at the time of his death was the oldest member of its board of examiners. As a student of anatomy he studied under the late Professor Allen Thomson and Dr. Mitchell Banks, afterwards the eminent anatomist and surgeon of Liverpool. As soon as he graduated he was appointed Senior Demonstrator of Anatomy by Professor Allen Thomson, and held this post for four years. During this period he formed that method of lecturing and demonstrating which he afterwards carried out so brilliantly in the Anderson College. At the close of his demonstratorship he spent two years as house surgeon and house physician in the Royal Infirmary, thus gaining a thorough knowledge both of surgery and medicine, and especially of the points which could be most aptly illustrated in his anatomical lectures. In 1874 he was appointed to the Chair of Anatomy in Anderson's College Medical School on the promotion of the late Professor George Buchanan to the Chair of Clinical Surgery in the University.

In his new Chair Dr. Buchanan had but one aim—to become a great teacher of anatomy. He was a brilliant dissector, and though much less of an artist than his great teacher, Professor Allen Thomson, he had imbibed much of the latter's skill at the black-board. He made not only clear pictures in chalk, but every specimen he demonstrated was converted by his scalpel into a picture designed to show without confusion the points he wished to insist on, and such that no student could fail to recognise and understand every topic prelected on. His students were the first to perceive the artistic clearness and precision of every demonstration, and were often heard to say, as they left his class-room, "Well, we have learnt a lot to-day." His style and manner in lecturing were formed partly after those of Professor Allen Thomson, but also, and to a greater degree, on those of Thiedemann, of Heidelburg, for whom Dr. Buchanan frequently expressed the greatest admiration. In 1906 Dr. Buchanan published a *Manual of Anatomy* in two handsome volumes, fully illustrated by drawings, some original, others from many different sources. The descriptions given are in his most characteristic style—short, terse, and clear, suited to the wants of students.

The work he did for the Anderson College was manifold. His teaching maintained and even advanced its reputation, and this was recognised alike by his students and by his colleagues, who from the oldest to the youngest regarded him as a source of strength both in their councils and in the daily performance of the duties of his chair. On the removal of the College to its present position his labours on its behalf were exceptionally arduous and fruitful, and he was of the utmost assistance by the practical aid he gave in the work of its building and establishment.

His *Manual of Anatomy* was not only an aid to learners far beyond the limits of the College, but its graphic and clear descriptions attracted within the walls many students desirous of sitting at the feet of one in whose hands the study of anatomy could be rendered so perspicuous and so attractive. Those who had learnt of him became in their turn further messengers of his fame; and it is no exaggeration to say that there are former students of his in every part of the world to bear testimony to the value of his work, and to grieve at the news of his decease.

Held as he was by all in high estimation as a teacher and scientific worker, the pleasures of familiar intercourse with him were amplified by the ease and affability of his relations alike with colleagues and students. Dignity and courtesy were ever the characteristics of his association with them, and those among them who knew him more intimately entertained for him feelings of a warmth perhaps somewhat unusual between teacher and taught.

In addition to the work of his Chair, Dr. Buchanan occupied for fifteen years the post of Freeland Lecturer on Anatomy and Physiology in the Anderson College, the lectures being directed towards the teaching of the general principles of these subjects to laymen. In this popular branch of his subject he was no less successful than in its scientific exposition, and his course attracted large numbers of the laity to the Anderson College. These lectures are now included in the course of the Technical College. From 1890 to 1896 he was Examiner in Anatomy to the University of Glasgow, and for many years, as has been already indicated, he was examiner in that subject to the Royal Faculty of Physicians and Surgeons.

Many years ago Dr. Buchanan's health broke down, and, though he partially recovered, he had been in recent years more or less of an invalid. He was able to discharge the duties of his Chair till last summer. His death on 9th November was rather unexpected, and to the many students who loved him with a whole-hearted affection it will come as the news of the loss of a dear and intimate friend.

The following is a list of Dr. Buchanan's publications:—

"Well-marked lobulation of kidneys in a human adult," *Journal of Anatomy and Physiology*, 1892.
"Use of peroxide of hydrogen in the preparation of bones," *ibid.*, 1893.
"Diverticulum of small intestine," *ibid.*, 1894.
"Abnormal cæcum and vermiform appendix, *ibid.*, 1894.
"Calcareous body from bursæ over patella," *ibid.*, 1894.
"Abnormal sternum," *ibid.*
Manual of Anatomy, Systematic and Practical, including Embryology, two volumes, 1906.

GEORGE COATS, M.D. Glasg., F.R.C.S., London.

We regret to announce the death of Mr. George Coats, which took place on 2nd November at a nursing home in Edinburgh, at the early age of 39 years. A son of the late Mr. Allan Coats, and nephew of the late Professor Joseph Coats, he was born at Paisley in 1876, and studied medicine at Glasgow University, where he took the degrees of M.B., Ch.B. in 1897, and that of M.D. in 1901. His thesis, written while he was house surgeon to the Glasgow Eye Infirmary, was concerned with the problems of ocular pathology, and was the forerunner of a series of brilliant papers which he contributed to the literature of the surgery of the eye. After graduation, Mr. Coats held resident appointments in the Royal, Western, and Eye Infirmaries of Glasgow, on the termination of which he went abroad, studying eye surgery, to which he had decided to devote himself, first at Vienna, and afterwards in Munich, Freiburg, and Zurich. On his return from the Continent he settled in London in 1902, became a Fellow of the Royal College of Surgeons in 1903, and was appointed pathologist and curator of the Royal London Ophthalmic Hospital, to which he became assistant surgeon in 1909 and full surgeon in 1914. In 1911 he was appointed assistant ophthalmic surgeon to St. Mary's Hospital, and for a time he held a similar post in the Hospital for Sick Children, Great Ormond Street, and was ophthalmic surgeon to the out-patient department, Great Northern Central Hospital. In 1910 he was Hunterian Professor at the Royal College of Surgeons, and chose for his subject congenital abnormalities of the eye, describing in the course of his lectures a hitherto unrecognised abnormality, cystic dilatation of the posterior chamber. Mr. Coats was a Fellow of the Royal Society of Medicine and secretary of the Ophthalmological Society, of which, in 1912, he was awarded the Nettleship prize and medal.

His contributions to ophthalmological literature were numerous and important. He read many papers before the Ophthalmological Society, and contributed longer articles and monographs to the various ophthalmological journals. Particular mention may be made of his monograph on the structure of the membrane of Bruch and its relation to the formation of colloid excrescences, which appeared in the *Royal London Ophthalmic Hospital Reports*, and of an article on retinitis hæmorrhagica interna, published in the *Archiv für Ophthalmologie* in 1912. Affections of the ocular vessels had much interest for him, and he had previously published papers on thrombosis of the central vein of the retina, obstruction of its central artery, and on the pathology of chorio-vaginal (posterior vortex) veins. Along with Mr. J. H. Parsons he translated von Hanke's *Therapie der Augenkrankheiten*.

Mr. Coats was a brilliant operator and an able clinician, and his premature death will be widely felt as a loss to the science of ophthalmology which he did so much to advance.

HUGH BROWN CURRIE, M.B., C.M. GLASG.,
JOHANNESBURG.

WE regret to announce the death of Mr. H. B. Currie, which occurred at Johannesburg early in November. Mr. Currie was a student of Glasgow University, where he took the degrees of M.B., C.M., with high commendation, in 1894. After graduation he held the appointments of assistant medical officer to Belvidere Fever Hospital, Glasgow; assistant physician to the Crichton Royal Institution, Dumfries; and senior resident physician to the Western Infirmary, Glasgow. He went to South Africa a few years before the outbreak of the Boer war, in which he at first served as medical officer of the Natal Carbineers, going through the siege of Ladysmith with that force, and was afterwards appointed Surgeon-Captain in the Imperial Light Infantry, receiving the South African medal and clasps. At the close of the war he became a Major in the Transvaal Volunteer Medical Staff Corps. He was one of the best known medical practitioners in Johannesburg, and was for some time physician to the Johannesburg General Hospital, to which he continued after his retirement to act as consulting physician. He held numerous medical appointments in the city, and was the author of a number of contributions to medical literature which appeared in the *Transvaal Medical Journal.*

JOHN HOLMS, M.D. GLASG.,
PAISLEY.

WE regret to announce the death of Dr. John Holms, which took place at his house in Paisley on 18th October. A native of the North of Scotland, Dr. Holms settled in Paisley when a boy, and began life there as a clerk in a manufacturer's establishment. While engaged in this employment he found time, by industry and perseverance, to attend classes in the University of Glasgow, and, devoting himself to the study of medicine, he took the degrees of M.B., C.M.Glasg. in 1871, and that of M.D. in 1873. For some time after graduation he acted as an assistant in the North of England, thereafter returning to Paisley, where he settled over forty years ago, and speedily made a place for himself. He acquired an extensive and important practice, the claims of which made large demands upon his time; but he also found time to give to the study of the fine arts, of which he was widely known as a connoisseur. He had an important and fine collection of pictures, many of which he lent to various loan collections. Dr. Holms is survived by a widow, two sons, and two daughters.

Brigade-Surgeon ANDREW BARRY, M.D. Glasg., Bombay Medical Service.

We regret to announce the death of Brigade-Surgeon Andrew Barry, Bombay Medical Service (retired), which took place at St. Andrews on 3rd October. Brigade-Surgeon Barry, who was 72 years of age, studied medicine at Glasgow University, where he took the degree of M.D. in 1864, and in the same year he took the diploma of L.R.C.S.E., going on in 1873 to the Fellowship. He entered the Army Medical Department in 1865 as assistant surgeon, passed the examinations for the Indian Medical Service, to which he was gazetted as Assistant Surgeon on 1st April, 1865, became Surgeon in 1873, Surgeon-Major in 1887, and Brigade-Surgeon in 1888, retiring from the service in 1895. He took part in the expedition against the Waghir tribes in 1865-66; in the operations of the Kathiawar Field Force in the Burdu Hills; in the Abyssinian campaign of 1867-68; and he was with the force which relieved Kandahar in the Afghanistan campaign of 1879-80. He received the medal in connection with both these latter campaigns.

DANIEL DOUGAL, M.D. GLASG., F.R.F.P.S.G.,
BOURNEMOUTH.

WE regret to announce the death of Dr. Daniel Dougal, formerly of Strathaven, which occurred at Bournemouth on 25th October. Dr. Dougal, whose father also practised in Strathaven, studied medicine at Glasgow University, where, after a brilliant career as a student, he took the degree of M.D., with honours, in 1859. In 1866 he became a Fellow of the Royal Faculty of Physicians and Surgeons, and in the same year he qualified as L.R.C.P.Lond. Settling in Strathaven he carried on for many years a very successful practice, both in the town and the surrounding districts. He took a keen interest in politics and in education. He was for long chairman of the Avondale Unionist Association, and contributed much by his ability and enthusiasm to the revival of Unionism in South Lanarkshire. During a long period he was also chairman of the Avondale School Board. His health failing, he retired some time ago from practice to the more genial climate of Bournemouth, where he died in his seventy-fifth year.

CURRENT TOPICS.

University of Glasgow: Graduation in Medicine.—At a graduation ceremony, held in the Bute Hall on 13th November, Principal Sir Donald MacAlister presiding, nine graduands in medicine received the degree of M.D. The following is a list of the medical degrees conferred:—

DOCTORS OF MEDICINE (M.D.)

I. With Honours.

Matthew Young, M.B., Ch.B.

II. With High Commendation.

Ernest Milne Eaton, M.B., Ch.B.

III. With Commendation.

Edward George Glovver, M.B., Ch.B.
Robert Maxwell Macfarlane, M.B., Ch.B.

IV. Ordinary Degree.

Francis James Barker, M.A., M.B., C.M.
Hugh Barr, M.B., Ch.B.
Jane Reid Foulds Gilmour (Mrs. Shrubsall), M.B., Ch.B.
Elizabeth Maud M'Vail, M.B., Ch.B.
Robert Macnair Walker, M.B., Ch.B.

Dr. Matthew Young has been awarded the Struthers Gold Medal and Prize in Anatomy for a dissertation entitled "A Contribution to the Study of the Scottish Skull."

Triple Qualification Passes.—At the examinations of the Board of the Royal College of Physicians of Edinburgh, Royal College of Surgeons of Edinburgh, and Royal Faculty of Physicians and Surgeons of Glasgow concluded at Edinburgh on 25th October, the following candidates, having passed the final examination, were admitted L.R.C.P.E., L.R.C.S.E., L.R.F.P., and S.G.:—Joseph John Armistead, Kirkcudbrightshire; Edwin Arthur Blok, Panadare, Ceylon; Andrew Mathewson, Newton-Stewart, Ireland; William Henry Arthur Douglas Sutton, St.

Heliers, Jersey; Octavus Walter Bateman, Cork; John Phillips Fairley, Leith; Edward Albert Neilson, Wellington, New Zealand; Maheput Seeraj, British Guiana; John Wight Robertson, Edinburgh; Joseph Elias Lezama, Trinidad, B.W.I.; William Primrose Walker, Edinburgh; Joseph Sydney Dickson, M.B., Kingston, Ontario, Canada; Douglas Charles Murray Page, Edinburgh; William Turner, Belfast; Archibald Evans, Merthyr Tydvil; Jesudason Sellyah David, Palamcottah, India; Owen Richard Jones, Hucknall, Notts; Alexander Gray M'Kee, Newbliss, County Monaghan; George Edward Mendis, Ceylon; and Thomas Weir Drummond, Greenock.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At a meeting of the college held on 20th October, the following gentlemen, having passed the requisite examinations between 5th and 8th July, 1915, were admitted Fellows:—

Harold Chaffer, L.R.C.S.E., &c., 53 King Street, Blackpool; James Alexander Cowie, M.D.Glasg. (M.B., 1904), M.R.C.S.Eng., &c., Honorary Surgeon, Masterton Public Hospital, Masterton, New Zealand; Alan Murray Stuart, M.R.C.S.Eng., &c., Leamore, Wallsall; Percy Charles Woolatt, M.R.C.S.Eng., &c., Medical Officer, H.B.M.'s Consulate, Shiraz, 33 High Oak Road, Ware, Herts.

APPOINTMENTS.—The following appointments have recently been made:—

Mrs. Elizabeth Butler, M.D.Glasg. (M.B., 1900), to be assistant to Dr. R. M. Buchanan, Bacteriologist to the Corporation of Glasgow.

J. W. Logie, M.B., C.M.Glasg. (1891), to be Certifying Factory Surgeon for the Rothes District, county of Elgin.

John Morton, M.B., C.M.Glasg. (1892), to be Visiting Surgeon to the Western Infirmary, Glasgow.

Royal Navy (18th October): Fleet-Surgeon O. Rees, M.D. Glasg. (M.B., 1889), to *Dominion*, to date 16th October.

25th October: Temporary Surgeon A. C. Anderson, M.B., Ch.B.Glasg. (1909), to *Antrim*.

27th October: Temporary Surgeons D. M'Alpine, M.B., Ch.B. Glasg. (1913), to *Falmouth;* R. W. Brander, M.B., Ch.B.Glasg. (1914), to *Columbine*, to date 26th October.

2nd November: Temporary Surgeon W. H. Steel, M.B., Ch.B. Glasg. (1898), to *Pembroke*, additional for Chatham Hospital, to date 5th November.

9th November: Temporary Surgeon W. MacMurray, M.B., Ch.B.Glasg. (1911), to *Victory*, additional for Haslar Hospital, to date 10th November.

Royal Army Medical Corps (16th October): To be temporary Captain—Temporary Lieutenant D. Lawrie, M.B., C.M.Glasg. (1882). To be temporary Lieutenants—W. C. Downs, M.B., C.M.Glasg. (1888); A. Macintyre, M.B., Ch.B.Glasg. (1902); W. G. Macdonald, M.B., Ch.B.Glasg. (1905); J. M. Lang, M.B., C.M. Glasg. (1893); A. C. West, M.B., Ch.B.Glasg. (1905); A. B. M'Lean, M.B., Ch.B.Glasg. (1910).

20th October: Undermentioned Captains to be Majors—C. P. Thomson, M.D.Glasg. (M.B., 1900), and to remain seconded; G. S. Wallace, M.B., Ch.B.Glasg. (1901).

22nd October: Temporary Lieutenant-Colonel R. T. Leiper, M.B., Ch.B. Glasg. (1904), D.Sc., to be temporary Honorary Lieutenant-Colonel.

23rd October: To be temporary Lieutenants—J. C. D. Simpson, M.B., ChB.Glasg. (1906); J. Todd, M.D.Glasg. (M.B., 1891); W. Colquhoun, M.B., C.M.Glasg. (1897); W. Rolland, M.D.Glasg. (M.B., 1905); S. Alexander, M.D.Glasg. (M.B., 1883); J. D. Smith, M.B., C.M.Glasg. (1893); N. Keith, M.B., C.M.Glasg. (1892); H. E. Jones, M.B., C.M.Glasg. (1892); T. G. Copestake, M.B., Ch.B.Glasg. (1907); D. W. Ritchie, M.B., Ch.B.Glasg. (1910); A. Girvan, M.D.Glasg. (M.B., 1894).

26th October: To be temporary Lieutenant—W. J. Rutherfurd, M.D.Glasg. (M.B., 1906).

30th October: To be temporary Lieutenants—D. Meek, M.B., Ch.B.Glasg. (1912); J. M. Frazer, M.B., Ch.B.Glasg. (1915); M. Turnbull, M.B., Ch.B.Glasg. (1907); H. Barr, M.B., Ch.B.Glasg. (1905); A. Naismith, M.B., Ch.B.Glasg. (1913); J. W. Miller, M.B., Ch.B.Glasg. (1907); R. D. Hodge, M.B., Ch.B.Glasg. (1902); W. Hamilton, M.B., Ch.B.Glasg. (1910).

1st November: To be temporary Lieutenant—R. Frew, M.B., Ch.B.Glasg. (1914), B.Sc.

5th November: Undermentioned temporary Lieutenants to be temporary Captains—W. Macewen, M.B., Ch.B.Glasg. (1910); J.

S. K. Boyd, M.B., Ch.B.Glasg. (1913); D. M. Borland, M.B., Ch.B. Glasg. (1909); R. M'C. Hill, M.B., Ch.B.Glasg. (1906); W. S. Martin, M.B., Ch.B.Glasg. (1914); H. L. Neil, M.B., Ch.B.Glasg. (1911); W. R. Snodgrass, M.B., Ch.B. Glasg. (1913); J. J. Sinclair, M.B., Ch.B.Glasg. (1909); H. G. Wilson, M.B., Ch.B. Glasg. (1912); J. W. M'Leod, M.B., Ch.B.Glasg. (1908); D. R. E. Roberts, M.B., Ch.B.Glasg. (1914); D. R. Mitchell, M.B., Ch.B. Glasg. (1904); J. M'L. Pinkerton, M.B., Ch.B.Glasg. (1914); J. H. M'Nicol, M.B., Ch.B.Glasg. (1909); D. W. Hunter, M.B., Ch.B. Glasg. (1901); J. S. Somerville, M.B., Ch.B.Glasg. (1909); J. M. Forsyth, M.B., Ch.B.Glasg. (1912); G. W. Milne, M.D.Glasg. (M.B., 1901); J. A. Smith, M.B., Ch.B.Glasg. (1913); W. H. Brown, M.D.Glasg. (M.B., 1901); A. T. M'Whirter, M.B., Ch.B. Glasg. (1910); T. T. Rankin, M.D.Glasg. (M.B., 1905); J. B. Orr, M.B., Ch.B.Glasg. (1912). Undermentioned to be temporary Lieutenants—A. Semple, M.B., Ch.B. Glasg. (1908); W. W. Farrar, M.B., Ch.B.Glasg. (1900); R. C. Muir, M.B., Ch.B.Glasg. (1907); A. Dingwall, M.B., C.M.Glasg. (1893).

8th November: D. W. Finlay, M.D.Glasg., to be temporary Honorary Lieutenant-Colonel whilst holding the appointment of Officer in Charge Red Cross Hospital at Bellahouston, Glasgow.

R.A.M.C., Territorial Force (16th October): Attached to units other than medical units—Captain John Lithgow, M.D. Glasg. (M.B., 1890), to be Major.

20th October: Lowland Casualty Clearing Station—Lieutenants A. Rankine, M.B., Ch.B.Glasg. (1914), and S. Robertson, M.B., Ch.B.Glasg. (1914), to be Captains.

22nd October: Lowland Mounted Brigade Field Ambulance—Lieutenants J. R. Herbertson, M.B., Ch.B.Glasg. (1911), S. S. Meighan, M.B., Ch.B.Glasg. (1912), and T. C. Houston, M.B., Ch.B.Glasg. (1915), to be Captains.

23rd October: Lowland Casualty Clearing Station—Lieutenant S. A. MacPhee, M.B., Ch.B.Glasg. (1911), to be Captain.

9th November: Lowland Field Ambulance—Lieutenant F. M. Robertson, M.B., Ch.B.Glasg. (1913), to be Captain.

THE MEDICAL PROFESSION AND WAR SERVICE.—The presidential address delivered on 2nd November by Principal Sir Donald MacAlister at the opening of the session of the

General Medical Council dealt with the relations of medical practitioners and students to the war emergency. The Principal said that it had been stated on the highest authority that within the next few months every qualified man of suitable age who was fit for the work of an officer in the Medical Corps would be needed. Civil practice in many of its branches must yield place to practice with the troops and in the military hospitals. The Medical War Committees in Scotland and England which had undertaken the organisation of the profession to this end were making progress with their difficult but imperative task. They were calling on the practitioners who remained behind to undertake increased labour and responsibility in order that the civil population might not go untended. They looked to the public to lighten the sacrifices and the burdens which all practitioners must endure in these days. The Insurance Commissioners had recognised that certain reasonable claims made in peace time, such as that for a "free choice of doctor," could no longer be pressed, and that in the common interest of all some of the customary privileges of the insured must be restricted. He was informed that in the rural districts the position was better understood than in the towns, and that the proportion of country practitioners who had been set free for military service was higher than that from the large centres of population. It had been suggested to him that owing to the somewhat loose attachment of the town patient to his medical man the latter had an uneasy apprehension that if he went into the Army his patients might be alienated and his practice absorbed by his neighbours, and that he was thereby deterred from offering himself as a volunteer. If there was any ground for this apprehension the local Medical War Committees were endeavouring to remove it by promoting equitable agreements between practitioners who remained on civil duty and their colleagues on active service. The country called for the unselfish co-operation of all ranks and classes in the common task. As to the future supply of persons duly qualified to fill their depleted ranks, the prospects were dubious. There was reason to think that when the arrangements with Canada were complete the number of Canadian practitioners on the Medical Register would be considerably increased.

With regard to the difficulties of individual students, Sir Donald said that, although the War Office authorities recognised that the withdrawal from professional instruction of large numbers of medical students would have a serious effect on the future, they had deemed it inadvisable to discourage any junior student who chose to offer himself for combatant service. They were naturally eager to serve with their comrades in the Army, but it was much to be desired that the Army authorities should give a clearer guidance than hitherto on this perplexing question. Many young men who were registered as students before the war began were meanwhile leaving the medical schools to accept commissions or enlist in the ranks. Women students continued to increase, and members of other professions were entering on the study of medicine, but the numbers of these did not make up for the loss of students already registered who had sacrificed the prospect of early qualification in order to join the King's forces.

The absence on military duty of medical men in family practice, particularly in the country districts, would almost certainly lead to the fuller employment of certificated midwives, and it was important that the training of these women should be adequate for the work they would be called upon to undertake. The Central Midwives Board for England had framed new rules providing for an extension of the course of instruction prescribed for its certificate.

In Scotland there was as yet no corresponding statute to that in England prescribing the course of instruction. No official certificate of fitness could be obtained by midwives in Scotland, and no central or local supervising authority regulated their practice. A woman trained in Scotland might obtain the Central Board's certificate by examination in England, but when she returned to practise in Scotland she ceased to be under the English Board's rules and supervision. The Council had urged the importance of legislation that would apply to Scotland the principles of the English Midwives Act, and it had carefully considered and approved a Bill for the purpose which has for some time been before Parliament. The need for the Bill was apparent from the fact that the ratio of maternal deaths to registered births in Scotland was half as large again as it was in England. The conditions created by the war, more especially in the Highland and rural districts had made the need more apparent than before. Strong representations had been made to the Government by leading members of the profession in favour of proceeding with the Scottish Bill in the current session of Parliament, on the ground that an emergency existed which ought to be provided for without delay.

Panel Doctors on Service.—The National Health Insurance Commissioners for Scotland have made amending regulations in regard to the administration of medical benefit, providing that an insured person who is on the list of a practitioner absent on military service on 30th November, 1915, shall not be entitled to select another practitioner or method of treatment at 31st December, 1915, unless, in addition to giving the usual notice, he satisfies the Medical Service Sub-Committee of the Insurance Committee that he has reasonable grounds for desiring a change.

Recruiting for the Medical Services: The Scottish Tribunal.—We are informed that the Scottish Medical Service Emergency Committee which for the last six months has been actively engaged in recruiting medical officers for the Army, has now been appointed the "Tribunal" for Scotland to deal with questions affecting the liability of medical men to undertake military service. The following is an excerpt from the letter of appointment addressed to the convener of the committee at the Royal College of Physicians, Edinburgh, by the Assistant Director-General of the Army Medical Service:—

War Office, Whitehall, S.W.,
12th November, 1915.

I have been directed by Sir A. Keogh to acknowledge your letter of the 9th November, and in reply am to say that your Committee is to be regarded as a "Tribunal" for medical purposes, and that you are empowered to issue letters of excuse to medical men whom you think it would be undesirable to call upon to undertake military service.

The Committee will shortly make a public announcement of the manner in which they propose to discharge this important national duty. The Committee is constituted as follows:—

Dr. A. H. Freeland Barbour, President of the Royal College of Physicians; Mr. J. W. F. Hodsdon, President of the Royal College of Surgeons; Dr. Ebenezer Duncan, President of the Royal Faculty of Physicians and Surgeons of Glasgow; Professor Kynoch, Dean of the Faculty of Medicine, University of St. Andrews; Professor Bryce, Dean of the Faculty of Medicine, University of Glasgow; Professor Shennan, Dean of the Faculty of Medicine, University of Aberdeen; Professor Littlejohn, Dean of the Faculty of Medicine, Edinburgh University; Dr. John Adams, Glasgow, Vice-Chairman, Scottish Committee, British Medical Association; Dr. G. C. Anderson, Methil, Secretary, Fife Branch, British Medical Association, and of the Fife County Local Medical and Panel Committees; Dr. J. R. Currie, Edinburgh, Senior Medical Officer, Scottish National Insurance Commission; Dr. John Gordon, Aberdeen, President, Aberdeen Branch, British Medical Association; Dr. J. R. Hamilton, Hawick, Chairman, Scottish Committee, British Medical Association; Dr. John C. M'Vail, Deputy Chairman, Scottish National Insurance Commission; Dr. John Playfair, President of the Edinburgh Medical Guild; Dr. John Stevens, Secretary, Edinburgh Branch, British Medical Association; Dr. Norman Walker, Edinburgh, direct representative for Scotland on the General Medical Council (convener).

The secretary to the Committee is Mr. T. H. Graham, Royal College of Physicians, 9 Queen Street, Edinburgh.

THE SCOTTISH RED CROSS.—The Director-General of Voluntary Organisations issues the following notice from Scotland House, New Scotland Yard, London, S.W.:—With the consent of the Central Office of the British Red Cross Society, recognition has been granted by the War Office to the Scottish Branch of the British Red Cross Society, as the central organisation for co-ordinating and carrying on Red Cross work in Scotland, and to act as the Central Red Cross Depôt for supplying standarised patterns to county Red Cross committees, both for hospital comforts and surgical supplies. Under this arrangement the Director-General of Voluntary Organisations will communicate with the Scottish Branch upon all points, and make his arrangements with them for Red Cross requisitions. This recognition of the Scottish Red Cross Branch in no way interferes with the War Office scheme for co-ordinating and regulating in Scotland the voluntary work organisations established to provide comforts for the fighting troops, as under the Geneva Convention the Red Cross can take no share in this work, but must confine itself to the sick and wounded.

Lords Lieutenant, Lord Provosts, and Provosts are requested to take the necessary steps to form county, city, or burgh associations to co-ordinate the efforts of all societies, associations, war hospital supply depôts, working guilds, and individual workers (not engaged in Red Cross work) in their respective areas, and to affiliate them on the lines of the circular-letter dated 1st October, 1915, issued by the Director-General of Voluntary Organisations.

SCOTTISH WOMEN'S HOSPITAL, TROYES.—The unit of the Scottish Women's Hospital stationed at Troyes received towards the end of October official orders to proceed to Salonica. The work of this unit, of which Mrs. Harley, sister of Sir John French, is in charge, Dr. Louise M'Ilroy, of this city, is Médicin-en-Chef, and Dr. Honoria Kerr, of Kilmarnock, is Assistant Surgeon, has on several occasions been recognised by the French Government as of striking excellence, but the receipt of the order to move with an Expeditionary Force is regarded as one of the highest compliments yet paid to a voluntary hospital. Since reaching Salonica the unit has proceeded to Gevgeli, just across the frontier between Serbia and Greece. Four units of the Scottish Women's Hospital are already in Serbia, and were in the territory now in occupation by the enemy. The fears that were entertained for their safety have happily been allayed by the news that there is reason to believe that they have evacuated in ample time.

WAR HONOURS FOR GLASGOW GRADUATES.—In the list of honours published in the *London Gazette* of 4th November appear the names of Captain J. R. M'Curdie, M.B., R.A.M.C. Special Reserves, attached to No. 2 Field Ambulance, and Temporary Lieutenant John Bruce Baird, M.B., R.A.M.C., No. 1

Field Ambulance. The Military Cross has been awarded to both of these gentlemen.

Captain M'Curdie, who is 26 years of age, took his degree at Glasgow University in 1912, and was a member of the University Company of the Officers' Training Corps. After taking his degree he acted as house surgeon in the North Riding Infirmary and then in North Ormesby Hospital, Middlesbrough, and he joined the Army on the outbreak of war. He was awarded his decoration "for conspicuous gallantry and devotion to duty from 25th to 27th September, 1915, at Le Rutoire Farm, where, although continuously exposed to shell fire, he collected and treated the wounded. By his efforts and organising power a large number of wounded were collected. Captain M'Curdie set a fine example to the officers and men under him in most trying circumstances."

Lieutenant Baird, who studied medicine at Glasgow University, where he took the degrees of M.B, Ch.B. in 1910, received his decoration "for conspicuous gallantry and devotion to duty from 25th to 27th September, 1915, when in charge of different bearer sections collecting wounded in the area between Lone Tree and Hulluch road under shell and machine gun fire."

In the list of those upon whom the D.S.O. has been conferred appears the name of Captain W. J. E. Bell, M.B., R.A.M.C., No. 2 Field Ambulance. Captain Bell is a graduate of Edinburgh University, but he has a connection with this city through his having been house surgeon in Glasgow Royal Infirmary, in the wards of his uncle, Dr. David Newman. His distinction was earned by "conspicuous gallantry and devotion to duty on all occasions, notably near Loos between 28th September and 1st October, 1915, when he visited the advanced bearer post day and night under continuous shell fire and personally supervised the arrangements for collecting and evacuating the wounded in that area. Captain Bell has commanded a bearer division since August, 1914."

GLASGOW MEDICAL CASUALTIES.—It is with much regret we announce the death of Captain G. H. Sloan, 2nd Scottish Horse, which occurred on 16th November from wounds received at the Gallipoli Peninsula. Captain Sloan, who was 37 years of age, was the third surviving son of Dr. Samuel Sloan, to whom in his sorrow the sympathies of the profession will be freely given. Captain Sloan had had previous experience of service, having been with the Scots Greys throughout the South African War. He was in command of the Frontiersmen in Vancouver at the outbreak of the present war, and came to this country with the Canadian Contingent. Dr. Sloan has two other sons with the colours—Lieut.-Colonel John Macfarlane Sloan, D.S.O., R.A.M.C., and Lieutenant-Colonel Samuel Sloan, Scottish Horse.

Lance-Corporal A. E. Perry, Machine Gun Section, 6th Cameron Highlanders, is officially notified as wounded and missing in France since 26th September. Corporal Perry, who is the youngest son of Dr. Robert Perry, enlisted with the University contingent early in September, 1914. Prior to the war he had been employed as an engineer in the drawing office of Messrs. Alley & M'Lellan, Polmadie.

Lieutenant J. B. Sweet, Royal Scots Fusiliers, has been wounded in the left hand in action near Ypres on 26th October. Lieutenant Sweet, who was in the third year of his medical course at Glasgow University, joined the army immediately after the outbreak of war. He was a member of the Officers' Training Corps, and at once received a commission as Second Lieutenant, being promoted Lieutenant three months ago. His is a very familiar name in Rugby football circles, for he has played for Scotland against both England and Ireland.

MEDICAL INSPECTION OF SCHOOL CHILDREN.—In his annual report on the medical inspection of children in the schools under the Govan Parish School Board during the year ended on 30th June, Dr. G. Arbuckle Brown points out that the figures relating to the sufficiency and repair of children's clothing show a marked improvement, and that the policy of providing for necessitous children has doubtless powerfully helped to bring about that result. The increased wage earnings, too, in many cases had been expended by the mothers on clothing and boots for their children. Referring to diseases of the nose, throat, and glands, he states that a considerable number of children suffered from chronic inflammatory conditions of the pharyngeal passages, and consequently of the lymphatic glands, which rendered them liable to various infective agents. The extension of the facilities for the treatment of such conditions in the Board's treatment clinics should be taken into serious consideration by the Board as soon as the financial difficulties created by the war had been overcome. Of the numbers examined 6·9 per cent suffered from abnormal conditions of the heart and circulation, and 1·7 per cent from diseases of the lungs; there were 21 cases of diseases of the nervous system, 22 of tuberculosis (non-pulmonary), 523—16 more than in the previous year—of rickets.

PREVENTION OF INFANT MORTALITY.—A meeting organised by the Central Economic Guild of the Central Committee for National Patriotic Organisations was held at the Mansion House, London, on 26th October, under the presidency of the Deputy Lord Mayor, Sir Vezey Strong, to inaugurate a national campaign to promote the welfare of motherhood and infancy. The object of the Guild is to co-ordinate all economic and kindred efforts on national lines so as to prevent overlapping and increase effectiveness. Local administrative authorities in all parts of the kingdom were represented by Mayors, medical officers of health, or chairmen of health committees. Queen Mary, Queen Alexandra, Mr. Asquith, Mr. Balfour, the Archbishops of Canterbury and York all sent messages sympathising with the objects of the meeting, and wishing success to its efforts.

Mr. Walter Long, President of the Local Government Board, said that they had been told that among the causes of infantile mortality was poverty. He believed they would find that the statistics proved that that was the least operative cause of all. Ignorance, dirt, and neglect were causes which operated far more largely than the actual want of money. To-day there were an enormous number of men serving their country on sea and land. Their women and children received liberal allowances from the Government for their maintenance. Were they quite sure that in all cases this money was being wisely and well spent? As there was not enough war work to go round among all the women who were anxious for it, the women who wished to be doing something should help in the task of combating infantile mortality. It was not so attractive as some so-called war work, but it was of equal importance. He would suggest, also, that all those who had plans of their own for dealing with the problem should agree to work in one group. There was no room in this field of labour for the faddist, but there was room for all who would agree to put aside their own particular notions and to work on the lines which had been well thought out by the National Association, and which had already proved effective. He could assure them that no official in his department would be allowed to stand in the way of the successful performance of this great and sacred duty.

The Duchess of Marlborough emphasised the need for the appointment of more women as sanitary inspectors and health visitors, and as members of the local health authorities. There was at present, she said, one health visitor to 4,000 children under 5 years of age; it had been estimated that there ought to be one to every 500 births. There was, unfortunately, a tendency to cancel the appointment of health visitors on the plea that there would be fewer births during the war, but it was to be hoped that this false measure of economy would not be persisted in. It was particularly in the poorer districts that infant welfare centres were most needed, and that owing to the difficulty of collecting money for voluntary effort the municipalities must undertake the work. She trusted, therefore, that the national policy of retrenchment would not be applied to expenditure on education and the care of the child.

Mr. Herbert Samuel said that we had to realise now that the security of our civilisation depended not only on the quality and efficiency of our people, but also on their numbers; and it was a fact which gave us food for thought that while the population of the United Kingdom increased in ten years by about 3½ millions, the population of Germany increased in ten years by 8½ millions.

At this moment the nations of Europe were engaged in the destruction of life on the most colossal scale known to history. Ready to our hands and obvious was the remedy, so far as this country was concerned, to make good the loss that we were suffering. Much of the mortality among infants was not inevitable, and, in addition, they must consider ante-natal mortality. The saving of these lives was one of the few questions in which the Government and the Legislature were ahead of the nation. The majority of local authorities showed little activity. Public opinion should be made more vocal.

Pressure should be brought to bear upon lethargic local authorities, and a greater number of men and women who have the time should throw themselves wholeheartedly into the work of the health associations and other organisations engaged in this movement.

Sir James Crichton-Brown said that up to the present we had irreparably lost at least 150,000 of the flower of our manhood, and this waste of human treasure imposed upon us the obligation to practise the strictest economy in human life. Now that we had a larger number of women than ever before engaged in industrial pursuits we must give them the benefit of the best ante-natal hygiene. We wanted, not puny, atrophied, debilitated brats, but promising little pink buds of humanity. That much of the mortality among infants could be prevented was beyond question. Doctors' babies died at the rate of only 40 per 1,000 in the first year because doctors knew how to look after them, whereas those of miners who did not know how to look after them died at the rate of 160. He advocated the establishment of pre-maternity wards in hospitals in every locality, and the cessation of laborious employment for two months before childbirth in all women likely to be injuriously affected by it; and he suggested that further investigation into ante-natal pathology should be made, and that for this purpose still-births should be registered and centres of scientific research established. It had been hoped that a grant of £25,000 would be made by Parliament for this purpose, and he understood that under certain circumstances the money might yet be asked for in a Supplementary Estimate.

REVIEWS.

Aids to Tropical Medicine. By Gilbert E. Brooke, M.A. Cantab., L.R.C.P.Ed. London: Baillière, Tindall & Cox. 1915.

While this book is one of the Students' Aid Series, it might be of more general service at the present time for those of the profession who may be sent to the East, and who have not had the opportunity of a training in tropical medicine. The notes on the various diseases are necessarily short, but the summaries would be most useful to one who was faced for the first time with Eastern troubles which demanded diagnosis and treatment. For this purpose, if for no other, we think the book is likely to fill a useful place.

Practical Organic and Bio-Chemistry. By R. H. A. Plimmer. London: Longmans, Green & Co. 1915.

Physiologists and bio-chemists in this country have long waited for an authoritative book on methods from the pen of a fellow-worker. They have been too long dependent on works of foreign origin, many of them extremely uncritical in nature, whose aim was not accuracy but comprehensiveness. Mr. Plimmer has filled in the gap in a most admirable fashion.

His book differs from all others in that a very large section of it—in the reviewer's personal opinion, too large a section—is devoted to pure organic chemistry. No doubt organic chemistry is the basis of all bio-chemical methods; but as this book is "intended mainly for medical students," it seems a heavy burden to lay on an already over-burdened course to demand that each and every student should master the contents. Besides, for the average medical student it is quite unnecessary.

The book is a mine of information, well and clearly put together. The methods advocated are apparently those which have given the best results in the hands of the author. The new micro methods, which are likely to revolutionise clinical laboratory technique, are dealt with in great detail. From the general standpoint, the most interesting sections of the book are those devoted to enzymes and to the blood pigments, particularly to the methods of estimating the blood gases.

Taken altogether, this volume is thoroughly sound, and can be recommended as a reliable book of reference for the laboratory worker.

The Vaccination Question in the Light of Modern Experience: An Appeal for Reconsideration. By C. KILLICK MILLARD, M.D., D.Sc. London: H. K. Lewis. 1914.

It is with a deep sense of satisfaction that one reads this book.

So many works on the vaccination question are based with extreme rancour on the pro-vaccinist or the anti-vaccinist theory that it is only doing bare justice to the author to state at the outset that he has attempted to approach the subject with an open mind. As he tersely puts it, between the pro-vaccinist and the anti-vaccinist a great gulf is fixed, and no one with knowledge of the subject will deny that there is still room for legitimate discussion and enquiry, and that no subject is so open to the fallacy of the falsehood of extreme opinion.

The author devotes two chapters to the Leicester experiment, in which he supports the contention that in that town not only the sickness incidence but the mortality rate from small-pox has been greatly reduced by improved sanitation.

This surely is an appeal to the converted, and not even the strongest pro-vaccinist will deny that good sanitary conditions constitute an important weapon in combating the disease. He will, however, have strong reasons for maintaining that this weapon is ineffective when compared with an efficiently vaccinated population.

Two chapters of the volume are devoted to proving that vaccination has a tendency to spread small-pox by masking the disease, and Dr. Chalmers, medical officer of our own city, is quoted (in the Small-pox Report, 1900-02) in this connection.

This thesis is a perfectly legitimate one; but as the author strongly affirms his belief in vaccination in either preventing small-pox or ameliorating its type, is not the consideration brought home with remarkable force that the laxity and carelessness with which vaccination has been performed in the past by practitioners should be replaced by greater vigour and care, and that revaccination ought to be made obligatory?

It is quite impossible to enter into a tithe of the questions which the author, with great care, places before his readers.

Suffice it to say that all who are interested in the supreme question of vaccination will find much food for reflection in a perusal of this book.

Examination of the Urine and other Clinical Side-Room Methods. By Andrew Fergus Hewat, M.B., Ch.B., M.R.C.P.Ed. Edinburgh: E. & S. Livingstone. 1914.

The only obvious value of this booklet appears to be that it can be carried in the waistcoat pocket. Otherwise the contents are all contained in any of the standard text-books on clinical methods, and are not here presented in a way which warrants for them any special mention.

Clinical Examination of the Blood and its Technique: A Manual for Students and Practitioners. By Professor A. Pappenheim. Translated and Adapted from the German by R. Donaldson, M.S., Ch.B., F.R.C.S.E. Bristol: John Wright & Sons, Limited. 1914.

This little book is devoted to the microscopical and cytological examination of the blood, and to the estimation of hæmoglobin. It leaves out of account all other methods of examination, and thus concerns itself only with those which may be easily performed by the practitioner himself. Professor Pappenheim uses only one stain, his own modification of the May-Giemsa stain, and obtains from it results which make all others unnecessary. The technique is exceedingly simple, and is likely to make blood examinations considerably less laborious, and therefore more frequently performed. His methods would be thoroughly worthy of trial were it not now impossible to obtain the stains and the hæmoglobinometer he recommends.

The Medical Annual, 1915. Thirty-third Year. Bristol: John Wright & Sons, Limited.

That there has been some delay in the issue of this *Annual* occasions no surprise, but that it has appeared in its usual form, and quite up to its recognised standard of quality, is a matter upon which publishers and contributors alike are to be congratulated. The general arrangement of the volume is similar to that of previous years, and it is difficult to select any parts for special consideration. A separate chapter is devoted to the new *British Pharmacopœia*, and some notes are incorporated on the metric system, which alone is official for compounding the remedies. The chapters devoted to naval and military surgery, while naturally attracting attention at the present time, are not so likely to be of special value owing to the advances which have been made during the currency of the war. The volume is copiously illustrated, and deserves a place in every medical collection.

Treatment of Tuberculosis and Lupus with Oleum Allii. By William C. Minchin, M.D. Second Edition. London: Baillière, Tindall & Cox. 1915.

This method of treatment was derived from a famous "scrofula cure" handed down for generations in the family of Mr. Charles Walker, of co. Meath, and was given to the writer of the present volume. It consisted of a poultice of soot, salt, and pounded garlic. The essential ingredient was found to be garlic, and the writer enthusiastically advocates its use, locally and internally, as a most efficient germicide. The oil is used for inhalation, and the juice used internally. The fresh or powdered plant can also be used locally as a poultice, or internally, and the writer claims its specific action in local and internal tuberculosis, except in those cases where we have fluid present with the tubercular deposit shutting it off from the general circulation.

The book is somewhat loosely written, and contains so many extracts and eulogies from other writers that one has to search with some care for simple practical directions on the application of the remedy. The writer, however, is so full of enthusiasm that some is sure to pass on to the reader; and the historical review is interesting, garlic being a Hindoo remedy 1,000 years B.C.

Medical Nursing. By A. S. WOODWARK, M.D., M.R.C.P. London: Edward Arnold. 1914.

IN this little volume Dr. Woodwark has aimed at conveying to the nurse, besides the details of her profession in the stricter sense, the meaning of the principles which underlie the instructions she receives from the attendant physician, and for this purpose he has included in his volume notes upon anatomy, etiology, symptomatology, and treatment. He fears that in consequence he may be accused of having "supplied a sort of minor text-book of medicine" rather than a nursing manual. Intelligent co-operation, rather than a merely passive obedience to orders, is always desirable, and few would be disposed to quarrel with Dr. Woodwark's methods did they succeed in securing it. But it is not obtained by imparting an irreducible minimum of information, and many of the writer's explanations are so brief as to leave the learner rather fogged than clear-headed. Nor is it obtained by imparting inaccurate information, and of this his book unfortunately contains many examples. For instance, under pericarditis, if the fluid is not absorbed, he says that "the doctor may have to draw it off," without indicating that this is practically never necessary in rheumatic pericarditis, the nurse being left to infer that a doctor who does not tap is neglecting his duty. Under acute endocarditis he advises cardiac stimulants; probably more harm is done by digitalis in this condition than all the good it does in cardiac failure. Of acne he says that it "is more commonly known by the term 'blackheads';" blackheads, as everyone knows, are comedones, not acne. Of empyema, dismissed in six lines, we are told "the treatment is described above;" and above, under pleurisy, where it ought not to be, the treatment of empyema is stated to be resection of a rib, and "the nurse is referred to a surgical book." These are faults of detail, but they have been culled from pages opened at haphazard, and they illustrate a slipshod habit of writing which pervades a volume otherwise not devoid of useful information.

Radiography, X-Ray Therapeutics, and Radium Therapy. By Robert Knox, M.D. London: A. & C. Black, Limited. 1915.

The work is divided into the usual two parts. The first, extending over 250 pages, deals with radiography; and the second, which is contained in about 150 pages, with therapeutics.

It is difficult to pick out one point more than another in this excellent work for special praise. It is beautifully illustrated, and Dr. Knox has greatly enhanced the value of the pictures by placing side by side a negative and a positive of the same subject. Then he has added numerous diagrams, which are of great assistance to the beginner. We wonder if diagrams 156 and 157 have slipped in accidentally, as they are the same as 159 and 160, the latter being labelled and well described; the former are not labelled.

The second part of the book gives a full and careful statement of what may be accomplished by treatment with x-rays and with radium, and Mr. Phillips, who is physicist to the Royal Cancer Hospital, has contributed a chapter on "Physics of radium." The technique of the various schools is given, and photographs of cases before and after treatment.

The book may without doubt be taken as a standard work, than which we have not a better.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

SURGERY.

Shockless Operations. By J. F. Baldwin (*American Journal of Surgery*, August, 1915).—Various theories have been advanced to explain the phenomena of shock following injury or operation, and the latest of these is that from the laboratory of Crile. His findings, however, have not been endorsed by other workers; indeed, many of them have put forward views which are antagonistic to his.

If we accept Crile's teachings, then all extensive operations in which no precautions are taken to block by injections the nerves leaving the field of operation should be followed by more or less shock. Experience, however, does not bear this out.

Excessive hæmorrhages and traumatisms due to violent handling of tissues do produce shock, and accordingly it is to be feared that workers who are careful manipulators and who adopt all means to prevent hæmorrhage, while at the same time using Crile's injections, are arguing on a *post hoc ergo propter hoc* basis. Crile may have mistaken the results of his own skill for the results of his "anoci-association."

This author (Baldwin) gives brief descriptions of 120 major operations, and in none of these was shock observed. The anæsthetic was ether administered by the drop method, preceded by hypodermic injection of one-sixth grain morphine with one-hundredth grain scopolamine, the injections being omitted in children. The operations were performed as rapidly as was consistent with thoroughness, care was taken to reduce hæmorrhage to a minimum, and sutures were always applied so as to obtain good apposition but not so tightly as to interfere with nerves or blood-vessels. He believes that too great tension in closing the incisions is the cause of much post-operative pain, and that attention to the avoidance of this renders local injections of quinine and urea unnecessary, and so risk of wound infection due to these substances will be obviated.

He concludes by stating that any surgeon who operates rapidly, who guards against unnecessary hæmorrhage, and who avoids brutality in handling tissues, will have shockless operations.—CHARLES BENNETT.

Painful Non-Tuberculous Joints. By Gwilym G. Davis (*Amer. Jour. of Orthopedic Surgery*, July, 1915).—There are three possible causes of chronic, painful non-tuberculous affections of joints—viz., traumatism, infection, and disturbed metabolism. While in a few cases the etiology may be traced to a single one of these causes, in most cases two or more factors are responsible. That the etiology is not generally known and accepted is proved by there being no standard treatment. The clamant condition in these cases is pain, and from the study of parallel affections the author suspects that pain is due to movement. The logical treatment, therefore, is rest. This is not generally carried out because of the belief that a joint being intended for movement the period of disability will be shortened by allowing a certain amount of use. He quotes the following case:—A woman, over 70 years of age, passed most of her time sewing. She had the big swollen knuckles of arthritis deformans. An acute illness laid her aside for two weeks, and at the end of that time the swellings of the fingers had largely disappeared and the hands were free from pain.

The painful osteo-arthritic spine should be treated by a well-fitting plaster jacket and rest in bed. For conditions of the hip and knee plaster should be applied from high up on the waist to the toes. For the shoulder-joint it may suffice if the arm is worn in a sling, or, better, fixed to the side as for a fractured clavicle.

The author feels justified in asking that the fixation method should be given a fair trial in order to determine whether rest should be considered an essential principle of treatment in these chronic painful joint conditions.

—CHARLES BENNETT.

DISEASES OF THE EYE.

War Injuries to the Eye.—Writing to the *Archives d'Ophtalmologie*, May-June, 1915, TERRIEN points out some interesting types of case in which eyes are injured in consequence of the bursting of shells.

In one class of case, a subacute or chronic conjunctivitis is set up by fine particles of dust being blown into, and embedded in, the ocular conjunctiva, and setting up irritation without any visible lesion.

The cases usually show conjunctival injection, œdema of the conjunctiva and photophobia. In some cases there is a slight discharge, but only in a few, and bacteriological examination is negative. Sometimes it is possible to see, with the corneal microscope, minute particles of dust in the corneal epithelium, but sometimes it is not. The symptoms are such that simulation is a possibility if one does not examine the corneal epithelium and find the dust embedded. The condition runs a very slow course.

Lesions in the interior of the eye include partial separation of the retina (3 cases), retinal hæmorrhages (4 cases), intra-ocular hæmorrhage (1 case). Several cases of "hole in the macula" have been seen.

Many instances are recorded in which vision has been more or less completely lost without any evident lesion when a man has been "blown up" by the bursting of a shell close to him. Usually the defect of sight passes away more or less completely in the course of time.

Other nerve troubles, deafness, loss of speech, taste, smell, &c., may accompany the loss of sight, and be more or less temporary.

Cantonnet, writing in the same *Journal*, records 2 cases of hemianopsia due to injury to the occipital region. In one case the condition was right homonymous hemianopsia, in the other a quadrant loss, lower and outer in the right eye, lower and inner in the left eye.

The author also records a case of subconjunctival dislocation of the lens in consequence of an injury by a piece of shell.

A case, with radiograms shown, is recorded also in which a large foreign body, part of the fuse of a shell, was blown into the orbit. It is a cylinder of brass 12 cm. in length and 12 mm. in diameter. The foreign body was extracted, and the man made a good recovery except that the vision of the eye was lost owing to injury to the optic nerve.

Lagrange, writing in the *Archives d'Ophtalmologie*, July-August, 1915, on war injuries, records a number of cases of rupture of the choroid, separation of the retina, and chorio-retinitis in consequence of indirect injury by blows from bullets, pieces of shell, &c., during the war.

In most of the instances of rupture of the choroid the injury by the shot has been to a part close to the eye. Many excellent, though uncoloured, prints of the fundus lesions are shown. It is of interest to know that such grave injuries can be inflicted on an eye by the sudden shock of a bullet wound.

The reviewer has seen two cases of bullet wound in the neighbourhood of the eye in which there was diffuse chorio-retinitis affecting that part of the eye nearest the track of the bullet, although the eye was not touched in either case.

Cantonnet, writing in the same *Journal* on war injuries, calls attention to the occurrence of attenuated sympathetic ophthalmitis, as described by de Lapersonne, in cases of war injuries of various kinds. This attenuated variety of sympathetic ophthalmitis is a true inflammation of the uveal tract, but much less violent and less serious in its results than the ordinary form. It is as insidious as the graver type, but yields to treatment much better.

In one of the recorded cases the inflammation only began on the seventeenth day after excision of the injured eye.

This attenuated variety of sympathetic inflammation is not the same as the chronic degenerative type of the condition which is sometimes seen long after an injury, and (one is tempted to say) before the case is settled in court or out of court.—Leslie Buchanan.

PATHOLOGY.

The Islets of Langerhans and the Pathogenesis of Diabetes Mellitus. By Aldo Massaglia, Modena (*Frankfürter Zeitschrift f. Pathologie*, vol. xvi).—A very complete summary is given of the most important literature dealing with the islets of Langerhans and their probable connection with carbohydrate metabolism. The literature may be divided generally into two sections —experimental and pathological anatomical. The evidence afforded by experimental investigation is decidedly in favour of the view that the islets of Langerhans are normally associated with carbohydrate metabolism, and that any injury or destruction of these structures is followed by an upset in the equilibrium of this metabolism such as occurs in diabetes mellitus. From the pathological anatomical section the evidence is not so unanimous, for while some writers describe lesions of the islets in diabetes, others find that lesions of the pancreas apart from the islets are frequent, while there is distinct evidence to show that lesions of the islets may exist without diabetes resulting. Taking the evidence from both sections, it is, however, apparent that there is a distinct balance in favour of the view that the islets are of great importance in connection with carbohydrate metabolism. Starting with this assumption it is, however, plain from the literature that the exact functions of the islets in the normal pancreas are not thoroughly understood, nor are the degrees of variation from the normal which are necessary to cause diabetes exactly appreciated.

Massaglia first experimented by tying the main duct of the pancreas in dogs and rabbits. As a result of this there occurred a very rapid and extensive degeneration of the gland acini, while the islets for a time remained undamaged, and no glycosuria resulted. Later, the islets also disappeared in the cicatricial fibrous tissue, and glycosuria developed.

His next experiments consisted in removal of varying amounts of pancreatic tissue. This did not apparently give very concordant results, for it was found that the removal of a certain proportion of the gland which was sufficient to cause diabetes in one animal would not cause it in another.

From the experiments and a consideration of the literature he concludes :—

1. That the carbohydrate metabolism is closely related to the pancreatic function, and that the islets are the important part of the gland in this relationship.

2. Only a proportion of the islets are necessary for complete functionation, but this proportion varies in individuals.

3. The disease diabetes mellitus is always associated with changes in the islets, and in cases where these changes are not observed it is due to insufficient examination of the gland.—JOHN SHAW DUNN.

The Islets of Langerhans of the Pancreas in Diabetes. By K. Martius, Frankfurt (*Frankfürter Zeitschrift f. Pathologie*, vol. xvii).—As an introduction to a description of his own most laborious investigation of the histological condition of the pancreas in diabetes, Martius gives a brief *resumé* of the work already done on this subject by Weichselbaum and Heiberg. Weichselbaum maintains that in diabetes the important changes are those which occur in the cells of the islets of Langerhans. These changes he classifies as sclerotic, hyaline, and dropsical. Heiberg, on the other hand, describes a marked diminution in the number of the islets as the significant fact in diabetes.

In describing his own series of cases Martius emphasises the need for early fixation of pancreatic tissue, since *post-mortem* changes occur very rapidly. Further, great care is necessary in sectioning and in counting the islets; full details of his own elaborate technique are given.

As a result of his work Martius finds histological changes in the cells of the islets of Langerhans which he classifies, much as Weichselbaum does, as sclerotic, hyaline, and dropsical, but adds two less frequent varieties, namely, atrophic and hæmorrhagic. An interesting point is that in the same pancreas islets showing marked pathological changes frequently lie alongside normal islets. This is seen in severe diabetes as well as in milder cases. The whole pancreas must therefore be examined for any exact data on this subject to be obtained. Apart from the changes in the islets an increase of the connective tissue in the pancreas, as a whole, forms the most frequent and striking change in diabetes. Other changes, such as fatty degeneration, sclerotic changes in the arteries, and a general inflammatory condition of the organ, are also occasionally found.

Martius therefore points out that while his results coincide to a certain extent with those of Weichselbaum, he cannot regard the changes in the cells of the islets of Langerhans as the sole cause of diabetes. He suggests that the condition of diabetes is due to a combination of the pathological changes in the acini and in the islets.

A long series of diabetic cases is given in which the number of the islets in the pancreas has been investigated. This is done, as already indicated, by a most exact and scientific method. The result is that, while a certain number show distinct, even marked diminution of the number of islets, a larger number show no diminution. There is absolutely no connection between the severity of the case and the number of islets found in the pancreas. Martius is therefore unable to agree with Heiberg in his view that diabetes is associated with diminution of the islets of Langerhans.

While engaged in this research, Martius noted that in a non-diabetic patient who had starved for some days prior to death the islets of Langerhans were distinctly more numerous than normally, where the gland practically functionates up to the point of death. This suggested to him that the islets may show a physiological variation in number coincident with the active and passive states of the pancreas. A few experiments on this point done on frogs, pigeons, and hens are recorded, but they are too few to allow of any deductions being made.

—JOHN SHAW DUNN.

Pancreas and Diabetes. By Dr. Bernard Fischer, Frankfurt (*Frankfürter Zeitschrift f. Pathologie*, vol. xvii).—The writer gives a very lengthy summary of the literature dealing with the relation between the pancreas and carbohydrate metabolism.

He then describes two cases of diabetes in children, one 6½, the other 12 years of age. In both cases there was marked degeneration and sclerosis of the islets of Langerhans, and in both the number of islets was greatly increased, apparently a phenomenon of regeneration. Many of the islets were, in both cases, of very large size. The extreme nature of the changes in the islets in these two cases of diabetes is regarded by the author as strong evidence in favour of the islet theory of the pathology of that disease.—JOHN SHAW DUNN.

Books, Pamphlets, &c., Received.

Principles of General Physiology, by William Maddoch Bayliss, M.A., D.Sc., F.R.S. With 259 illustrations. London: Longmans, Green & Co. 1915. (21s. net.)

A Text-Book of Surgery, by Richard Warran, M.D., M.Ch.Oxon., F.R.C.S. Vols. I and II. With 504 illustrations. London: J. & A. Churchill. 1915. (25s. net.)

The Structure of the Fowl, by O. Charnock Bradley, M.D., D.Sc., M.R.C.V.S. Containing 73 Illustrations. London: A. & C. Black. 1915. (3s. 6d. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDED 20TH NOVEMBER, 1915.

	Week ending			
	Oct. 30.	Nov. 6.	Nov. 13.	Nov. 20.
Mean temperature, . .	44·1°	40·9°	42·0°	27·2°
Mean range of temperature between highest and lowest,	9·2°	14·4°	8·0°	11·9°
Number of days on which rain fell, ...	4	1	3	1
Amount of rainfall, . ins.	0·76	0·01	0·68	0·13
Deaths (corrected), . .	363	354	350	402
Death-rates, ...	17·6	17·1	16·9	19·4
Zymotic death-rates, . .	1·0	1·0	1·0	0·9
Pulmonary death-rates, .	5·5	5·5	5·4	6·5
Deaths—				
Under 1 year, . . .	89	63	76	82
60 years and upwards, .	79	89	93	114
Deaths from—				
Small-pox, ...	...	...	...	...
Measles, ...	7	6	6	4
Scarlet fever, . . .	9	9	5	7
Diphtheria, . . .	1	2	3	5
Whooping-cough, . .	1	1	2	2
Enteric fever, . . .	2	3	2	...
Cerebro-spinal fever, . .	2	1	...	1
Diarrhœa (under 2 years of age),	14	4	14	4
Bronchitis, pneumonia, and pleurisy, ...	99	99	93	105
Cases reported—				
Small-pox, ...	...	...	...	...
Cerebro-spinal meningitis, .	6	2	3	5
Diphtheria and membraneous croup, ...	44	31	27	23
Erysipelas, . . .	29	33	43	34
Scarlet fever, . . .	159	188	194	171
Typhus fever, . . .	...	1	...	...
Enteric fever, . . .	8	6	7	5
Phthisis, ...	53	46	37	33
Puerperal fever, . .	4	8	2	1
Measles,* . . .	72	92	73	67

* Measles not notifiable.

Sanitary Chambers,
Glasgow, *24th November*, 1915.

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